

INTERNATIONAL JOURNAL OF LAW MANAGEMENT & HUMANITIES

[ISSN 2581-5369]

Volume 9 | Issue 2

2026

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The Role of Alternate Dispute Resolution in Mitigating Climate Change and Achieving Sustainable Development

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ABSTRACT

Climate change is among the greatest existential challenges that are facing humanity in the 21 st century. In spite of the collective international actions with references to the international frameworks and organizations like the Paris Agreement and the Sustainable Development Goals (SDGs), environmental degradation keeps growing. The traditional system of law especially in relation to environmental litigation has been found to fail in providing fair and prompt results because of delays in the process, technical ignorance, and institutional overload. Here, the Alternative Dispute Resolution (ADR) options are being adopted as an expedient and dynamic legal tool to enable climate management, arbitrate environmental conflicts and realign development processes with sustainable ecological directives. In this paper, the author will discuss how ADR, in form of mediation, arbitration, and negotiation, could facilitate climate justice and environmental sustainability. It also discusses the loopholes of the current climate litigation system, the purpose of ADR in addressing SDGs, and case examples both national and global where ADR has effectively been utilized in solving complicated environmental issues. The paper, with the help of a multi-disciplinary approach based on law, environmental science, and development studies, attempts to add to the debate on how economic development can be reconciled with ecological preservation.

Keywords: *Climate Change, Alternate Dispute Resolution, Sustainable Development, Environmental Justice, Mediation*

I. INTRODUCTION

The climate change is not only an issue but also a deep socio-legal problem as widespread as climate change is known to be. According to the Sixth Assessment Report by the Intergovernmental Panel on Climate Change (IPCC), anthropogenic emissions caused by the burning of fossil fuels and un-sustainable land-use have been concluded as the primary cause of global warming and ecological destabilization (IPCC, 2023). It is no longer a distant

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possibility but the actual outcomes are in the form of the increased intensity of heatwaves, unpredictable rain patterns, increased sea levels, glaciers melting and collapsing ecologies.

As a country that is highly susceptible to climate change, India has been facing a series of negative climatic incidents. The climate crisis has assumed a local immediacy that requires systemic redress in legal and policy terms (Ministry of Environment, Forest and Climate Change [MoEFCC], 2021) that can be traced back to the frequent floods in Assam and Kerala to the extreme droughts in Bundelkhand and Marathwada. The socio-economic impact of such events is mind-blowing, and the burden of the effects is more often carried by the marginalized and indigenous people who have contributed less to the emissions of the planet but on them impacts are more severe (UNDP, 2020).

The climate change mitigation attempts have been predominantly regulated by multilateral accords like the United Nations Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol and the Paris Agreement. These legal tools have provided the basis to take global action on climate. Nonetheless, the process of these promises implementation at the domestic level is still diffused and politically disputed. In India, the policies such as the National Action Plan on Climate Change (NAPCC), and its ancillary eight missions demonstrate the will of the country to embark on a low-carbon transition, however, the implementation of these policies into practical and binding mechanisms always faces legal and administrative points of bottlenecks (Dubash & Ghosh, 2019).

At the same time there has been a growth in Indian legal system in the number of environmental litigation, mainly in the form of Public Interest Litigation (PILs) and judicial activism by the National Green Tribunal (NGT) and the Supreme Court of India. Although these forums have greatly broadened the scope of environmental jurisprudence, they are constrained by the delays in the process, lack of scientific expertise, and uneven enforcement (Sharma, 2021). The spar-headed paradigm of litigation is not generally best adapted to addressing the multi-stakeholder, technical, and transboundary aspects of climate litigation.

Alternate Dispute Resolution (ADR) mechanisms have been emerging as a plausible and supplementary solution in this legal vacuum. ADR is a range of processes which are mediation, arbitration, conciliation and negotiation aimed at settling disputes beyond the court system. Their interdisciplinary nature, flexibility, and adaptability render them especially appropriate to disputes in the environment and climate, which usually demand interdisciplinary input, active involvement, and restorative effects (Menon, 2020).

This paper, thus, aims at questioning and assessing the position of ADR in easing climate

governance and promoting the objectives of sustainable development. It also places ADR not in the alternative procedural context of ADR but as a substantive mechanism that can change environmental justice landscapes. This paper seeks to provide answers to a key question, which is based on the evaluation of legal frameworks, policy documents, case studies across the world and institutional innovations: Can ADR be a transformative process toward the reduction of climate change and still achieve justice, equity and sustainability?

II. THE CURRENT STATE OF CLIMATE CHANGE: GLOBAL AND INDIAN PERSPECTIVES

A. Global Climate Emergency: Trends and Indicators

The scientific community has changed its stance regarding climate change since it began as a warning which has now turned into a declaration of a worldwide crisis. According to the Sixth Assessment Report issued by the Intergovernmental Panel on Climate Change (IPCC), global warming has already attained an average of 1.1 Degree Celsius above pre-industrial levels due to greenhouse gas emission arising as a result of human activities (IPCC, 2023). The speed of global warming has increased at an alarming pace with every four decades being warmer than the previous (since 1850) (NASA, 2022). The results of climate models have now inferred that the world would reach the dangerous parameter of 1.5 degrees of warming soon as early as the 2030s unless there is a radical decrease in emissions (United Nations, 2022).

One of the most threatening signs is the further increase of the global mean level of the sea. The World Meteorological Organization (WMO, 2023) states that the sea level rise has increased twice over the last thirty years, and the future scenarios may lead to the rise of up to 1 meter by the year 2100 in case of a high-emission scenario. This increase threatens low-lying coastal countries, deltas and island communities and the effects cannot be reversed.

In addition, the rate and severity of the extreme weather events have risen dramatically, which include heatwaves, wildfires, floods, hurricanes and droughts. More than 30 disasters associated with climate extremities took place all over the world in 2023 alone, resulting in economic damages of more than USD 300 billion and displacement of more than 43 million individuals (EM-DAT, 2023). Climate change does not exist as a far-off future anymore, it is a lived-in reality of millions of people all over the world.

B. Sectoral Emissions and Ecological Footprints

The burning of fossil fuels, coal, oil and natural gas to produce electricity, heat, and transport remains the major contributor of emissions worldwide. According to the International Energy

Agency (IEA, 2023), fossil fuel burning contributes to about 75 percent of all greenhouse gas (GHG) emissions and over 90 percent of the CO₂ emissions of the globe. Industrial agriculture and livestock production also play a major role especially in terms of methane (CH₄) and nitrous oxide (N₂O), which are far more potent global warming gases than CO₂ (FAO, 2022).

Another key issue is land use changes such as deforestation. According to the estimates given by the Food and Agriculture Organization (FAO, 2020), the globe annually loses 10 million hectares of forest due to commercial agriculture, logging, and urban development, which are worsened by commercial agriculture, logging, and urban sprawl. Not only does that decrease the carbon sequestration capacities but contributes to the loss of the biodiversity and the displacement of the indigenous people.

C. Health Crises and Climate Change.

Climate change and public health are becoming two aspects that overlap. The increase in temperatures and shift in precipitation have accelerated the spread of the vector-borne diseases which include malaria and dengue. The Lancet Countdown Report (2023) indicates that nowadays, climate change is considered the direct cause of contributing to health disparities in the world, with the most vulnerable groups being the most affected. Heatwaves are more deadly; more than 61,000 excess deaths in Europe alone have been attributed to heat-related diseases during summer in 2022 (Robine et al., 2023). The issue of mental health and climate anxiety, particularly among the youth, is also being identified as an emerging public health crisis.

D. Climate vulnerability and Emission profile of India.

India is placed in a paradoxical state about global climate. On the one hand, it ranks as the third-largest emitter of GHGs in the world and this result is significantly attributed to its coal-reliant energy industry and an increasing urban-industrial population. On the other hand, it is one of the nations at highest risks of the impacts of climate change. Germanwatch Global Climate Risk Index (2021) states that India is ranked among countries that are most exposed to the impacts of extreme weather events.

The agrarian societies especially the rural communities in the states of Maharashtra, Rajasthan and Bihar are at a high risk. The rising number of droughts and floods have impacted the crop cycles, lowered agricultural earnings, and caused distress and migration of farmers (India Meteorological Department [IMD], 2022). Cities, such as Delhi, Mumbai and Chennai, are experiencing urban heat island effects, serious air pollution and strain on infrastructure, because of unplanned urban growth and climatic pressure.

The National Determined Contributions (NDCs) of the Paris Agreement bind India to introduce

a reduction in the intensity of its GDP emission by 45 per cent in comparison with 2005 aims and the ingrainment of 50 per cent cumulative electric power set up by non-fossil fuel by 2030 (MoEFCC, 2022). Although these are good goals, the reality has been imperfect, with the problem of policy disunity, absent state capacity, and funding limitations, hindering the development (Raghunandan, 2023).

E. Disparities in Global and Domestic Climate Response.

The response to the climate crisis has not been good despite the presence of the international frameworks and national climate action plans. In 2023, merely 26 out of 193 countries are consistent in their national legislation with their goals in the NDC (Climate Action Tracker, 2023). The developed nations commitments to provide USD 100 billion annually to the developing countries through global climate financing have not been achieved much (OECD, 2022). Climate adaptation, then, is unfairly as well as unnecessarily imposed on the Global South including such countries as India.

Moreover, institutional and legal mechanisms of response to conflicts caused by climatic factors, be it the control of water resources, territory, or energy, are not developed. The litigation process is time consuming, expensive, and adversarial and thus, does not suit in quick and dynamic environmental problems. It highlights the urgency of incorporating more agile, inclusive, and interdisciplinary systems into the wider system of climate governance, including Alternate Dispute Resolution.

III. AN OVERVIEW OF THE TOPIC OF CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT.

A. History of the Development of Sustainable Development.

Sustainable development came into the global scene through the publication of the World Commission on Environment and Development Brundtland Report in 1987, officially called Our Common Future. It conceptualized sustainable development as development that addresses the needs of the current generation without putting into question the capacity of the future generation to address their needs (WCED, 1987). In this framework, there was acknowledgment of the interrelationship between the economic growth, social inclusion and environmental protection-three pillars that should work in a balanced form to guarantee long term well being of the planet and human beings.

The concept of sustainable development has over the years been institutionalized in a number of instruments of the world. It is worth mentioning that the 1992 Rio Earth Summit resulted in

the introduction of Agenda 21, the United Nations Framework Convention on Climate Change (UNFCCC), and the Convention on Biological Diversity (CBD). These were the building blocks of further developments, such as the Kyoto Protocol (1997), the Johannesburg Declaration (2002), and most remarkably, the adoption of the Sustainable Development Goals (SDGs) in 2015 by the United Nations general assembly (United Nations, 2015).

The 2030 Agenda of Sustainable Development consists of 17 SDGs and 169 targets, and Goal 13: Climate Action is the one that is especially applicable in the realm of the global warming. It is targeted at urgently fighting climate change and its effects, and is connected to numerous other goals, such as the one about clean energy (Goal 7), sustainable cities (Goal 11), responsible consumption (Goal 12), and strong institutions (Goal 16).

B. Climate Change as an Obstacle to Sustainable Development.

The issue of climate change poses deep concerns to the implementation of sustainable development in the world. Limited precipitation, an increase in temperatures, and sea-level rise has a direct negative impact on food security, water availability, the conservation of biodiversity, and the health of the population, which are key elements of the SDGs (IPCC, 2023). As an example, Goal 2, aiming to achieve the elimination of hunger, faces a big risk in the form of dwindling agricultural production following the unpredictable monsoons and changing agro-climatic areas (FAO, 2022).

Moreover, development infrastructure is more and more destroyed by disasters that are caused by climate. According to a report by the World Bank (2021), the combined impact of climate change would drive more than 132 million individuals into poverty in the year 2030. The most vulnerable groups such as those living in the Global South are the least prepared to adjust to such changes and this aggravates the existing inequalities. The problem of gender inequality, social exclusion, and intergenerational inequalities is exacerbated during the climate crisis, and the sustainable and fair development model becomes even more challenging to attain (UN Women, 2022).

The COVID-19 pandemic also manifested the dependence of ecological resilience and human development. The same drivers exist between environmental degradation and zoonotic diseases, and the economic recession created by the pandemic has taken resources and focus on the climate commitment of many countries (OECD, 2021).

C. Development Imperatives and Climate Trade-offs of India.

The growth history of India has shown that there is an intricate interaction between sustainability and development. Being a fast growing country, India has the challenge of

pursuing socio-economic development of the 1.4 billion people and at the same time ensuring that environmental degradation is reduced to a minimum. The reliance of the country on coal as the source of electricity, the development of municipal infrastructure, and the growth in consumption habits have contributed to the growth of carbon emissions and the exploitation of natural resources (Raghuandan, 2023).

Meanwhile, there are profound weaknesses in India. Climate-sensitive aspects of the economy such as agriculture, fisheries and forestry are relied on by a significant number of people. Late onset of monsoons or unseasonable hailstorms have caused major losses of crops and misery among farmers due to climatic variability (IMD, 2022). Moreover, the unavailability of clean cooking fuel, clean drinking water, and buildings that will withstand disasters contributes further to the effects of climate change on marginalized populations.

The reaction of India to these trade-offs has been characterized by a line-up of new policies, such as National Solar Mission, Perform Achieve Trade (PAT) Scheme, and the drive towards Electric Vehicles (EVs). Nevertheless, such efforts are still incomplete and are poorly coordinated with other departments and poorly regulated in most cases (Dubash & Ghosh, 2019). In addition, the adoption of climate-smart development needs not only policy coherence but also the presence of dispute resolution structures that can resolve the growth demands and ecological integrity.

D. Law, Justice and Sustainable Development Nexus.

Law is one of the key factors in resolving the conflicts between development and environmental protection. The effect of environmental laws when properly implemented can provide the grounds of sustainable land use, control of environmental pollution, and natural resource conservation. Nevertheless, when big infrastructure initiatives are at stake, particularly in areas such as mining, energy, and transport, the rule of law is usually evaded or watered down, which results in demonstrations, judicial challenges, and stalemate (Kohli and Menon, 2020).

Here the idea of environmental justice can be pronounced. It requires equal sharing of environmental benefits and harms and makes sure that those groups who are vulnerable do not end up being disproportionately exposed to ecological degradation or displacement caused by development. The courts have been on the forefront in the interpretation of the constitutional rights to have environmental rights, especially in India. However, the formal litigation is limited in its way, it is time-consuming, not always available to poor communities, and, maybe, even lacks technical skills in the field of climate science.

Alternate Dispute Resolution (ADR) mechanisms are, therefore, a solution. ADR will be able

to close the gap between the economic aspirations and the environmental responsibility by establishing consensus, creating trust and promoting an inclusive dialogue.

IV. ENVIRONMENTAL TENSIONS AND THE FRONTIERS OF LAWSUITS

A. Nature of Environmental Conflicts during the Climate Era.

The Anthropocene era has made environmental conflicts more complicated as they are characterized by conflicting interests in industrial expansion, environmental protection and human rights. Most of the climate-based conflicts center on conflicting territories, water, air quality, biodiversity, and utilization of natural resources. Such fights are further exacerbated by power, information, and access to justice imbalances, particularly where the interests of the indigenous populations or disadvantaged communities are set off against corporate or state ones (Leach et al., 2018).

There will be conflicts in different levels; local communities versus extractive industries; state governments versus central environmental authorities; and even between national borders of common water basin or transboundary pollution. As an example, the case of environmental contestation of Indian mining in India over the central highlands, or the dams of large size that are built on the Brahmaputra River affecting both India and China is an aspect of multiscalar environmental contestation (Baviskar, 2004; Swain, 2017).

Climate change increases the magnitude of these conflicts by bringing about new uncertainties. Alterations in rainfalls, glacial melting and salinisation of the freshwater resources are derailing conventional lifestyles and resource sharing systems, thereby providing the virgin ground on which legal and social conflict can be fought (IPCC, 2023).

B. Environmental Dispute Judicialization.

The Indian legal environment has seen the increase of environmental litigation especially by the use of Public Interest Litigations (PILs). The Indian Supreme Court and the High Courts have widely applied Article 21 of the Constitution that guarantees the right to life, to encompass the right to clean and healthy environment (MC Mehta v. Union of India, 1987). With the creation of the National Green Tribunal (NGT) in 2010, an independent platform of environmental justice became institutionalized even further.

The courts have made some of the landmark rulings which required an environmental impact assessment, polluter pays principle, and the stoppage of massive deforestation of the forest or urban encroachment (Divan & Rosencranz, 2001). These interventions have been important but rather systemic than reactive and episodic.

Besides, litigation in most cases has the effect of delaying justice. The cases in the environment field need a strong scientific backing, expert testimony and interdisciplinary studies all of which are either not available or just poorly incorporated in the Indian legal system. An example of this is the NGT, which has been criticized in terms of delays, inconsistency in delivering its decisions, and inadequate reach to the affected communities despite having the technical experts (Rajamani, 2019).

Formal environmental litigation on the international front is also limited in a similar way. International investment treaties have included investor-state dispute settlement (ISDS) mechanisms which typically have considerations based on commercial interests over environmental protection, resulting in regulatory chill in climate-sensitive industries (Tienhaara, 2018).

C. Obstacles to Effective Litigation.

The major limitation first is accessibility. There are usually no legal aid systems or they are poor in the rural and marginalized regions. Communities dealing with such cases are not able to approach the courts due to language, unawareness, and financial reasons. Also, the environmental cases are usually complicated and technical and they require specialist representation which most people cannot afford (Sahu, 2021).

The second issue is delay. The Indian courts are under an immense backlog: there are more than 70,000 cases that wait in the Supreme Court and more than 4 crore cases overall in all the courts (National Judicial Data Grid, 2023).

Thirdly, it has fragmentation of jurisdiction. There are various regulative bodies including pollution control boards, forest departments, and mining regulators with similar responsibilities, but minimal coordination. This causes competing orders and regulatory confusion particularly in the enforcement of environmental clearances and impact assessment (Kohli & Menon, 2020).

Lastly, there is poor enforcement. Courts take long to implement even progressive decisions made by the court because state agencies are against it, the courts lack the capacity to implement the decision and the politicians influence the implementation. Consequently, legal successes frequently do not change the world but merely the image.

D. Requirement of Supplementary Legal Mechanisms.

Amidst these shortcomings it is increasingly urgently sought to supplement formal litigation by means that are available, participatory, and functional. The Alternate Dispute Resolution (ADR) comes across as one of these avenues. ADRs are non-adversarial, economical and have the

capacity to incorporate scientific, social, and cultural aspects of environmental conflicts. In addition, they are capable of developing consensus-building and long-lasting stakeholder involvement that are usually lacking in courtroom conflicts.

Timely resolution is essential in environmental conflicts especially those that are based on the disruptions caused by climatic factors. It can be a conflict over the right to the forest, the compensation of the climate-related displacement, or the dispute over the amount of the emission, ADR can finalize the case in the quickest possible time and in a fair manner.

V. THEORY AND PRINCIPLE OF ALTERNATE DISPUTE RESOLUTION (ADR).

A. The Conceptual Foundations of ADR.

Alternate Dispute Resolution (ADR) refers to a list of formalized procedures that are applied to settle disputes outside of the traditional courts. Such techniques are arbitration, mediation, conciliation, negotiation and hybrid techniques like med-arb (mediation and arbitration). The ADR is based on the principles of voluntariness, confidentiality, party autonomy, flexibility, and neutrality (Redfern & Hunter, 2015).

The origin of the development of ADR as a legal process concerns the discontent with the adversarial quality of litigation, its expensive expenditure, prolonged periods, inflexible rules of procedure. ADR is especially applicable in the situations when relational continuity, technical complexity, or restorative results are preferable - which are key to climate and environmental conflicts (Menkel-Meadow, 2016).

ADR has been established and encouraged internationally by various bodies. International Trade Law United Nations Commission has come up with model laws and guidelines on arbitration and conciliation. ADR frameworks are comprehensive and could be found in institutions such as the International Chamber of Commerce (ICC), the Permanent Court of Arbitration (PCA) and the International Centre of Settlement of Investment Disputes of the World Bank (ICSID). In India, ADR is known in Section 89 of Code of civil procedure, 1908 and has been supported by Arbitration and Conciliation Act, 1996.

B. ADR Mechanisms and their relevance to the environment.

Arbitration is a quasi judicial procedure where a third party makes a binding ruling upon hearing evidence and submissions put forward by the parties in dispute. It is subject to procedural regulations that the parties have agreed on and is becoming increasingly applicable in multi-faceted commercial and investment disputes that affect environmental regulations (Schill et al., 2022). Indicatively, international arbitration has been used to deal with pollution, destruction of

biodiversity and regulatory expropriation in which environmental standards affect foreign investments.

Instead, mediation is a collaborative process that is not binding and in which the neutral facilitator helps parties to come to an acceptable resolution. Environmental conflicts are particularly attributed to mediation because it promotes interaction, focuses on mutual interests, and prolongs cooperation. It is also being applied in land use cases, indigenous rights cases, and the multi-stakeholder development projects (Susskind et al., 2017).

Conciliation entails having a conciliator who then sits with parties individually and collectively to negotiate the dispute. A conciliator will be allowed to suggest solutions, even though it is similar to mediation. This model can be frequently used in labor conflicts and may be modified to solve the conflict concerning the environmental impact that could be on local or municipal level.

Negotiation is the least formal ADR mechanism since parties in conflict discuss it out and settle their dispute. Negotiation in the environmental governance is an important tool in the drafting of climate agreements, resource allocation and partnership formation among climate stake holders including governments, non-governmental organisations and private business organisations.

Med-arb and arb-med are hybrid practices, which incorporate both mediation and arbitration, and they provide flexibility and finality. These mixed processes are gaining more and more ground in environmental project finance disputes and carbon trading procedures.

C. The India Legal Recognition and Institutional Support of ADR.

India has gone a long way towards institutionalization of ADR mechanisms. Arbitration and Conciliation Act, 1996, which is based on the UNCITRAL Model Law, is the law of domestic and international arbitration, and a legal framework of conciliation. The Act has been amended several times with the latest amendment being conducted in 2021 to enhance efficiency, autonomy, and enforcement.

The code of civil procedure, 1908 section 89 provides that wherever possible, courts must send cases to ADR. Lok Adalats are also encouraged under the Legal Services Authorities Act, 1987 as a way of community-based conciliation applied in settling small scale environmental disputes, i.e. water sharing, claims of compensation, cases with a public nuisance (Bhattacharya, 2020).

Commercial and contractual arbitration are provided in institutional ADR centres like the Delhi

International Arbitration Centre (DIAC), Mumbai Centre of International Arbitration (MCIA) and Indian Council of Arbitration (ICA). Though such institutions are yet to adopt climate or environmental disputes fully, they constitute a possible arena of incorporating such disputes in terms of procedural reform and special training.

Although a formal court, the National Green Tribunal (NGT) has demonstrated a tendency to issue consensual and conciliatory decisions in certain cases especially where the coordination of multi-agency efforts is needed. An increasing movement towards the adoption of ADR alternatives in the operation of NGT and other environmental regulatory bodies is becoming increasingly popular (Rajamani, 2019).

D. Benefits of ADR to Climate and Environmental Governance.

ADR is beneficial in a number of ways compared to conventional litigation as a climate governance framework. To begin with, timeliness is an important benefit. Environmental problems tend to require immediate action- whether it is a conflict over the illegal logging or restitution funds on afforestation effort. ADR has the ability to deliver quicker solutions thereby averting the irreparable ecological harm.

Secondly, scientifically based ADR processes can be achieved. Parties may bring in experts to explain technical issues of levels of emissions, degradation of biodiversity or water pollution routes, which is often poorly covered in court hearings.

Thirdly, ADR facilitates participatory justice. It also enables numerous stakeholders to be included in the decision-making process such as tribal communities, government agencies, developers, and environmentalists, which helps to create a sense of legitimacy and compliance.

Lastly, the ADR processes are less confrontational and more supportive of the long-term collaboration, which is especially necessary in the context of climate governance where intergenerational fairness and permanent interaction are supposed to be crucial.

VI. THE CONTRIBUTION OF ALTERNATE DISPUTE RESOLUTION TO ENVIRONMENTAL DISPUTES

A. Putting ADR into Perspective, Environmental and Climate-Related Conflicts.

Environmental disputes are not just similar to conventional legal disputes in a number of important aspects. They are generally transboundary, usually multi-party and highly interwoven with public interest, cultural identity, and ecological sustainability.

By contrast, the mechanisms of Alternate Dispute Resolution (ADR) are more inclusive, flexible, and collaborative. International organizations, domestic legal frameworks and civil

society users are increasingly recognizing their potential in the environmental arena. This growing legitimacy can be testified to by the fact that the sub-field of ADR known as environmental dispute resolution (EDR) has been gaining popularity (Leary and Bingham, 2003).

The ADR techniques would particularly come in handy in addressing the conflict involving climate change, where there is need to embrace long-term collaboration and multi-stakeholder involvement. As an example, ADR can be used in the resolution of disputes occasioned by the location of renewable energy plants, distribution of carbon credits or resettlement caused by the impact of climate.

B. The Mediation and Conciliation in Climate Governance

There is growing application of mediation in solving complicated ecological conflicts between governments, communities, and industries. It is especially useful in situations where the relationship between parties has to be preserved or re-established- i.e. continuous negotiations on forest rights, sharing of water, and involvement of the community in climate adaptation projects.

In India, environmental mediation has not yet reached full development but there are increased cases of community-based conciliation especially in matters of forest conservation and access to biodiversity under the Forest Rights Act, 2006 and Biological Diversity Act, 2002. These are usually small scale or semi formal negotiations often mediated by local NGOs, gram sabhas, or forest rights committees and these are the adaptation of ADR mechanisms by the Indians (Samarin et al., 2003).

The Environmental Mediation Centre in Austria and the Consensus Building Institute in the United States have also managed to mediate a number of hazardous waste siting, wetland conservation and carbon offsetting protocol controversies internationally (Susskind et al., 2017). Those models depict the way in which technical data, local knowledge and collaborative problem-solving can be incorporated in the consensual decision-making process.

C. Environmental and Investment Disputes through Arbitration.

Arbitration has also gained more applicability in the cross-cutting of environmental regulation and foreign investment. Numerous bilateral investment treaties (BITs) and free trade agreements (FTAs) permit a foreign investor to dispute environmental regulations of a host state with the international arbitration tribunal. Although these mechanisms were initially condemned to sabotage the sovereign regulatory powers, there has been a recent jurisprudence that seeks to balance the rights of investors and the rights of the environment.

For example, in *Urbaser v. The tribunal in Argentina* (ICSID Case No. ARB/07/26) recognized the possibility of corporate accountability in the areas of human rights and sustainable development. Even though the case did not lead to a decisive change, it was a step toward acknowledging environmental responsibilities in the arbitral system (Schill et al., 2022).

The use of green arbitration clauses, which arise where the arbitrators are knowledgeable of the environmental law, or where the sustainability issues are a specific part of the terms of reference, is a new phenomenon in India. These provisions may be incorporated in the public private partnership (PPP) agreements, carbon trading schemes or impact benefit accords involving the local people.

D. ADR Community-Resource Conflict and Ecosystem Management.

Most of the climate related conflicts are based on the use of the natural resources- forests, rivers, minerals or coastlines. These contradictions are usually well entrenched in colonial land grabbing, discriminatory policies and development strategies used after the independence that put industrialization above environmental fairness (Baviskar, 2004).

The ADR mechanisms can resolve these grievances which have been historically embedded by mediating participatory, culturally sensitive, and compensatory discussions. Community mediation has worked in solving the pastoralists-forest departments conflict in Gujarat, and fisherfolk-tourism operator conflicts in coastal Kerala (TERI, 2021).

Trust-building, legitimacy of the mediator as well as capacity-building among the stakeholders are critical in ensuring the success of such interventions. Also, dispute resolutions procedures should be tied to binding agreements and legal empowerment so that the results of negotiation table do not get easily overturned or appropriated.

E. ADR Avoiding Disaster and Climate Displacement.

Displacement due to climate provides a new edge of conflict and dispute settlement. By 2050, more than 200 million people are anticipated to lose their home due to rising sea levels, desertification, and extreme weather events (World Bank, 2021). This creates many legal issues on land rights, rehabilitation and resettlement, most of which cannot be properly addressed using traditional litigation.

ADR can provide flexible and adjustable mechanisms of dealing with such disputes that are related to displacement. Indicatively, in Bangladesh, local intermediaries have also been involved in the settlement of conflict between climate migrants who have been transferred and the communities among whom they have been resettled. These strategies will be applicable in

the Indian states that have been on the rise experiencing intra-state climate migration and consequent land and water strains.

F. ADR as a Justice Enabling Process.

Environmental justice does not simply involve dispersing harms and benefits in an impartial manner, but procedural justice, acknowledgment, and engagement. When properly structured by ADR mechanisms, with equity and inclusiveness as their key components, can promote environmental justice through providing voice to the marginalized stakeholders, integrating indigenous knowledge, and creating solutions that become context-specific.

ADR in climate governance can be successful with regard to its participation in formal legal institutions, political will, and community engagement. In the absence of these, ADR will simply be a shallow answer, which lacks enforceability or legitimacy.

VII. ADR AND SUSTAINABLE DEVELOPMENT GOALS (SDGS).

A. Connecting ADR to the 2030 Agenda of Sustainable Development.

The implementation of the 2030 Agenda on sustainable development by the United Nations general assembly in 2015 was a critical turning point in the development policy of the world. The 17 Sustainable Development Goals (SDGs), and its 169 targets is an overall roadmap towards tackling the most acute social, economic, and environmental issues globally. Although they are important and significant in their own right, the goals are connected, and the successful completion of one of them is often dependent on the progress of other ones (United Nations, 2015).

Alternate Dispute Resolution (ADR), although not directly stated in the SDGs, is in line with the principles and logic of operation of the Agenda. The participative, inclusive, and restorative features of ADR mechanisms support the values of SDGs, particularly when it comes to the accessibility of justice, the advancement of peace, and the facilitation of climate action. By so doing, ADR becomes not only a procedural tool but also a facilitator of sustainable development in terms of a system.

B. ADR & Goal 16: Peace, Justice, and Strong Institutions.

Goal 16 also focuses on the fact that there should be peaceful and inclusive societies, access to justice of all people, and effective, accountable and inclusive institutions. ADR helps in achieving this objective because it is cost effective and provides prompt solutions to conflicts, minimizes the court workloads and enhances participatory justice mechanisms.

In judicial systems such as India where the judicial delays and access barriers are most acute,

ADR systems such as Lok Adalats, arbitration tribunals, and community mediation centres represent alternative spaces through which the end state of justice can be achieved. Such platforms are essential in rural and climate-prone areas, where the institutions usually do not exist or are not trusted (Bhattacharya, 2020).

In addition, ADR facilitates institutional innovation by allowing multi-stakeholder governance in decision-making concerning the environment and climate. ADR processes may be used to create consistency between fragmented legal and administrative systems by incorporating scientific expertise, local knowledge, and regulatory norms (O’Leary and Bingham, 2003).

C. ADR and Goal 13: Climate Action

Goal 13 demands the immediate response to climate change and its effects. This will involve building resilience, enhancing climate education, and the institutional capacity to plan climate and resolve disputes. Climate change is becoming a source of more conflicts, including the allocation of emission rights, adaptation funds, resettlements, and loss-and-damages compensation, most of which are beyond the jurisdiction of traditional courts.

ADR processes particularly mediation and negotiation could be used to play a central role in supporting climate diplomacy, settling transboundary disputes as well as containing community level conflict caused by climate induced displacement or scarcity of resources. As an example, water-sharing deals among neighboring states or the elimination of land claim disputes between climate migrants and the population of the destination country are better aligned with ADR frameworks (Susskind et al., 2017).

Moreover, with the proliferation of carbon markets, green finance tools and climate risk insurance across the world, ADR may provide specialized resolution systems to address contractual and regulatory disputes in the nascent markets.

D. ADR and Goal 17: Collaborations with the Goals.

The seventh goal SDG 17 emphasizes the need to have multi-stakeholder partnerships to aid and boost SDG implementation. ADR is ideally placed to act as a mediator between different actors, namely: government agencies, private corporations, civil society organizations, and victimized communities. ADR brings about a sense of trust and coordination between parties in an otherwise hostile relationship through mutual dialogue and solving problems together.

Hybrid forums of dialogue and negotiation have been developed in India where various forest governance projects, watershed management projects, and community energy projects have attempted to harmonize conflicting interests (TERI, 2021). These practices reflect the ethos of

Goal 17 with its vision of inclusive partnerships that are based on mutual responsibility and agreement.

E. ADR's Contribution to Other SDGs

In addition to Goals 13, 16 and 17, ADR also indirectly supports a number of other SDGs:

- **Goal 6** (Clean Water and Sanitation): Settling water-sharing crises and contamination wrangles by mediation.
- **Goal 7** (Affordable and Clean Energy): Resolving renewable energy contract and siting issues.
- **Goal 11** (Sustainable Cities and Communities): Negotiating urban land use and development projects to avert displacements.
- **Goal 15** (Life on land): Making forest management and access to biodiversity participatory.

F. In the direction of an SDG-consistent ADR Ecosystem.

In order to realize the maximum potential of ADR in the implementation of SDGs, structural reforms should be implemented. They are the establishment of special environmental ADR commissions, inclusion of ADR within the framework of climate policies, and the training of mediators and arbitrators on the postulates of ecology and sustainability. In addition, the ADR results are to be acknowledged and applied with the same gravity as the court decisions particularly in matters that affect the environment where time is an important factor.

ADR can be then a key feature of the SDG mission by integrating this strategic approach within its national and global sustainability architecture to make it a central instrument.

VIII. CASE STUDIES: NATIONAL AND INTERNATIONAL DISPUTE RESOLUTION IN CLIMATE DISPUTES.

Case studies give theoretical merits of Alternate dispute Resolution (ADR) mechanisms empirical approval. As a policy in the environment and climate governance, effective ADR interventions demonstrate the possibilities of consensus-building, long-term mitigation of conflicts, and ecologically-based decision-making.

A. National Case Studies: India

Forest Rights dispute mediation: Gadchiroli, Maharashtra.

In the tribal district of Gadchiroli, there were conflicts between the forest-dwelling populations

and the Forest Department over arrangements of Minor Forest Produce (MFP) and collaborative management of forest lands which were resolved by community forums that were led by civil society organizations. Participatory negotiation and local practices/customs were used by reaching an agreement on the governance of community forests without any lengthy litigation under the Forest Rights Act, 2006 (Sarin et al., 2003). This model shows the efficiency of mediation processes based on cultural roots and low costs in the process of solving resource-use disputes.

Environmental Compensation Lok Adalats: Tamil Nadu.

Lok Adalats have been employed in various industrial towns of Tamil Nadu to arbitrate the claims of compensation claims involving water contamination, air pollution by industries and destruction of the environment through illegal dumping of waste. These forums though small in scale have been able to provide quick and cheap settlements to communities affected. As an example, during a 2018 Lok Adalat held in the Tamil Nadu State Legal Services Authority, more than 120 claims of pollution by a tannery unit were settled during one sitting (Bhattacharya, 2020).

NGT-Facilitated Settlement: Case of Yamuna Floodplain.

In the *Manoj Misra v. In the case Union of India in the National Green Tribunal* (2015), the court urged government agencies and event organizers to mediate following massive environmental degradation in the Yamuna flood plain owing to a cultural festival. Although the case entailed a massive judicial management, a mediated settlement was achieved in order to have the floodplain rehabilitated, and the organizers paid compensation. The case of this hybrid model of court-sponsored settlement demonstrates the way ADR supplements the judicial process in emergency situations related to the environment (Rajamani, 2019).

B. International Case Studies

PCA Arbitration: Indus Waters Kishenganga Dispute

In the case of the Kishenganga Hydro-Electric Project, India and Pakistan settled a water dispute in the Permanent Court of Arbitration (PCA) in the Indus Waters Treaty (1960). Although a formal arbitration, the proceedings were marked by a diplomatic talk and technical mediation between the sides. As depicted in the case, environmental arbitration has the potential to integrate hydrological information, ecological effects, and treaty readings to solve complex transboundary climate-related disputes (PCA, 2013).

Mediation in the REDD+ Implementation: Indonesia.

Indonesia, in its climate promises under the REDD + (Reducing Emissions through Deforestation and Forest Degradation) program had many land ownership conflicts with the native populations. Indonesia Forest Governance Program applied the community-based mediation to settle the conflict between palm oil companies and local forest users. The customary land rights were acknowledged in mediated settlements and the guidelines were set on how to harvest sustainably, thus improving the level of compliance to the REDD+ and lowering emissions (UN-REDD Programme, 2016).

A case to be reviewed concerns an investor-state dispute involving *Vattenfall v. Germany*

In *Vattenfall AB v. The Swedish energy company, Federal Republic of Germany* (ICSID Case No. ARB/12/12) brought a suit against Germany after it resolved to eliminate nuclear energy. The conflict was mainly economical, but the environmental values were the key to the proceedings. A negotiated settlement was reached in the confidential arbitration in 2021. Although this has been criticized due to the absence of transparency, the case demonstrated that international ADR forums are becoming more involved in environmental regulatory activities and sustainability transitions (Tienhaara, 2018).

Community Environmental Mediation: British Columbia, Canada.

Environmental mediation was institutionalized in British Columbia, Canada, by environmental appeal boards and community negotiation panels. Mediators were used in one landmark case which was the land-use planning in the Great Bear Rainforest where they were called upon to mediate between logging companies, the First Nations communities and environmental groups. The result was a historic deal that has saved a huge temperate rainforest coupled with a sustainable economic growth (Susskind et al., 2017).

C. Major Lessons of the Case Studies.

These case histories highlight a number of critical points:

- ADR can be used in any legal culture and institutional arrangement, between tribal villages in India and international tribunals.
- Its success will depend on political goodwill, good faith facilitation and enforcement.
- ADR is especially useful in the cases of indigenous rights, resources allocation, environmental rehabilitation and transitional justice.
- Judicial oversight and mediated settlements Hybrid models are a promising path when there is a crisis or a complicated environmental case.

IX. CONCERNS AND OBJECTIONS TO ADR IN CLIMATE GOVERNANCE

Although the Alternate Dispute Resolution (ADR) mechanisms possess several benefits related to the environmental and climate-related conflict resolution, they cannot be implemented unconditionally. The validity, availability, and enforceability of ADR outcomes do not apply uniformly to situations, and these issues have essential concerns regarding the fairness, effectiveness, and responsibility. These issues should be strictly analyzed in the context of climate governance in which disputes usually entail structural inequalities, past grievances, and lasting ecological effects.

A. Gaps of Representation and Power Asymmetries.

One of the main complaints regarding ADR, especially in environmental conflict situations, is that it may help to strengthen the status quo. Indigenous peoples, informal settlers, or displaced individuals due to climate may be not legally literate, have no negotiating strength, or institutional backing to take part in ADR successfully (Leach et al., 2018). When this happens, it poses a risk of having the consensus results being advanced or influenced towards the interests of stronger stakeholders, including corporations or state agencies.

There are no requirements of a third-party adjudication or legal representation in ADR processes like formal litigation. This elasticity, which is usually marketed as a virtue, can lead to the informality of procedure that disfavors vulnerable populations. Lacking proper protection, ADR may justify predatory settlements opposing the desires of environmental justice.

B. It has no Binding Authority or Enforcement Mechanisms.

This is because, although some ADR approaches are not binding, particularly, mediation and conciliation, which are the most commonly used methods are limiting in climate governance. In contrast to court decisions, mediated settlements are very dependent on self-enforcement. In cases of regulatory breach, clean-up or resettlement requirements, no enforceability means may result in the incorporation of tokenism or sluggish application (Menon, 2020).

The arbitration awards are binding, but not enforceable in cases where the jurisdiction does not have strong legal structures or where the award is in total contradiction to the national environmental rules. As an example, the application of arbitral awards pursuant to the New York Convention may be denied due to the public policy exception, which is frequently used when it comes to environmental issues (Schill et al., 2022). This leaves uncertainty to the stakeholders who would want to have predictable consequences on conflicts involving climate.

C. Technical Complexity and Scientific Uncertainty.

Climate controversies can deal with technical information of various complexity, including carbon emissions, ecological levels or hydrological modeling. In developing countries, ADR processes, in particular, might be characterised by the lack of institutional capacity to incorporate scientific evidence in a meaningful way. Lack of autonomy of the technical specialists or evidence-vetting mechanisms may undermine the quality and credibility of ADR results (Rajamani, 2019).

In addition, climate science is uncertain and probabilistic, thus, it is not easy to determine a clear causality or liability in certain instances. Strong players in ADR circles may also use this uncertainty to water down environmental claims or postpone corrective action.

D. Jurisdictional Uncertainty and Institutional Disaggregation.

There is often a overlapping jurisdiction in environment disputes between the municipal authorities and environmental agencies, the national courts and international forums. Lack of precise mandate or coordination systems tend to lead to forum shopping or duplication of procedure. ADR, which is not part of a consistent institutional framework, can contribute to this fragmentation instead of eliminating it (Kohli & Menon, 2020).

Also, many countries, such as India, do not have specialized environmental ADR institutions. Current ADR centers do not necessarily possess the thematic knowledge or procedural rules to deal with climate governance matters successfully. Peripheral in environmental legal systems ADR has the risk of becoming peripheral without institutional reform and capacity-building.

E. Procedural Justice and Cultural Sensitivity.

The ADR processes might unwittingly overlook or marginalize the traditional dispute resolution structures particularly in the indigenous and tribal settings. The traditional law and communal practices usually possess their own systems of conflict solving resources and these systems are founded on ecological ethic and social relationship. Formal implementation of ADR without consideration to the context might lead to the loss of local legitimacy and cultural continuity (Baviskar, 2004).

On the other hand, informal or community-based ADR should also be considered in terms of their compliance with the constitutional rights, gender equity, and due process. Not every traditional mechanism is natural, just and inclusive. Thus, the use of ADR in climate conflicts should find a compromise between cultural sensitivity and universal rights paradigm.

X. INSTITUTIONAL INNOVATIONS AND POLICY RECOMMENDATIONS.

A. Introduction

The growth in the application of Alternate Dispute Resolution (ADR) in environmental and climate governance is a worldwide movement towards more participatory, flexible, and interdisciplinary forms of justice. Nevertheless, the issues that were highlighted in the previous section suggest that the use of ADR should be conscious, tightly controlled, and in tandem with overall objectives of sustainability and equity. This section presents a list of policy suggestions and institutional forms of innovation to improve the credibility, effectiveness, and scalability of ADR to resolve climate-related conflicts.

B. Set up Specialized Environmental ADR Tribunals or Panels.

One of the key institutional gaps in most jurisdictions including India is the lack of forums to do environmental ADR. Having thematic competence and procedural consistency could be achieved by establishing special tribunals or panels at the leadership of the existing authorities like the National Green Tribunal (NGT), State Pollution Control Boards (SPCBs), or even at the Ministry of Environment, Forest and Climate Change (MoEFCC).

Such forums ought to contain a mix of lawyers, scientists in environmental areas, technical advisors and the community leaders. These panels may have the responsibility of expediting controversies involving emission infractions, deforestation, resettlement, biodiversity lawsuits and ecosystem recovery.

C. Build a Climate-Specific ADR Framework of Law and Policy.

The existing legal and policy framework in India does not have a unified framework that considers ADR in environmental governance or climate governance. ADR mechanisms could be institutionally integrated into environmental clearance exercises, negotiations after a disaster and climate-finance contracts by a new policy framework, which might be under the National Action Plan on Climate Change (NAPCC) or an amendment to the Environment (Protection) Act, 1986.

The framework must also state clearly the standards of procedure, eligibility of cases, available forms of ADR processes, enforcement of the results, and appeal remedies. This will minimise jurisdictional confusion and encourage uniformity in the application of ADR in interstate and inter-sector.

D. Develop Mediators, arbitrators and legal professionals capacity.

The unavailability of trained professionals having cross-disciplinary knowledge is one of the

greatest bottlenecks in environmental ADR. An environmental science, climate change law, indigenous rights, and sustainable development national capacity-building program, maybe under the umbrella of the National Judicial Academy or State Legal Services Authorities should be initiated to train mediators, arbitrators, and legal professionals in these areas.

Climate negotiators and community mediators should also be created in special modules, especially in the climate vulnerable regions. Colleges of environmental law such as the Indian Law Institute, TERI University, and NLU centres might be engaged in curriculum making and training.

E. Encourage Community and Traditional ADR Systems.

Traditional and local communities have been using dispute resolution techniques based on culture and ecological ethics. These systems, although generally informal, can be critical in mediating the conflicts surrounding land, water and biodiversity, which are climate related. By acknowledging and incorporating these mechanisms into the institutionalized ADR, the ecology and local legitimacy can be promoted.

States need to work out modalities by which statutory ADR processes can be connected to customary dispute systems so that integration in any way compromises constitutional rights, gender justice, or due process.

F. Reward ADR Implementation of Environmental Impact Assessments (EIAs)

The process of environmental clearance has been a source of controversy between the sponsors of such projects, the authorities and the locals. Mandatory/incentivizing pre-clearance ADR e.g. facilitated stakeholder consultations/structured community negotiations can help to reduce the escalation of conflicts, delays and promote a more inclusive decision-making process.

The Ministry of Environment might change rules on EIA Notification to officially incorporate ADR as a dispute resolution mechanism in high-risk or high-stakes projects, those projects which impact on forest areas, coastal areas or tribal settlements.

G. Promote Green Arbitration Clause.

Commercial agreements that relate to the infrastructure, mining of the natural resources, or the reduction of carbon emission should be pushed to include green arbitration terms. These provisions may impose obligations on arbitrators to be environmentalists, need arbitration decision-making to include sustainability principles, or to put ecological recovery in the final result of any dispute.

The government agencies, government sector undertakings and international development

finance institutions must lead in mainstreaming such clauses in the public-private partnership (PPP)s, climate finance contracts and international procurement tender.

H. Secure Transparency, Inclusion, and Imposition of ADR Results.

To be effective in climate governance, ADR has to have a democratic basis of accountability. All the processes, especially the ones, which have an implication of public interest, must be opened up, and options of third-party scrutiny and community control should be provided.

Courts and regulating bodies should acknowledge the outcomes of ADR as binding and binding, particularly when it comes to compensation, restoration, or compliance with regulations. A quick appellate process within NGT or the High Courts in relation to grievances involving ADRs would help to make the process more accountable and trustworthy.

I. Reform ADR Transboundary and International Climate Governance.

Climate change is not national in nature. The conflicts over common rivers, transboundary pollution or migratory species demand trans-boundary cooperation and adjudication. India ought to lead the establishment of ADR systems including joint river mediation councils or regional climate arbitration panels institutions under the guise of South Asian or Indo-Pacific legal systems.

Moreover, the diplomatic activities of the Indian government on COP negotiations and climate finance conferences can promote inclusion of the ADR pathways in international treaties, carbon credit markets and loss and damage protocols.

The reinforcement of ADR in climate governance must be in the form of a comprehensive combination of legal change, institutional innovation, and cultural adaptation. This should be with a view to creating an ecosystem of conflict resolution, which is efficient as well as fair, inclusive, and ecologically conscious. States can make environmental law and development planning more just and sustainable by proactively mainstreaming ADR into their process.

XI. CONCLUSION

Climate change has not only become a deep ecological crisis, but it is also the intricate legal as well as a socio-political concern that puts pressure on existing institutions of governance and justice systems. With the escalation of the effects of climate change, there is increased conflict in the form of scarcity of resources, displacement, regulatory trade-offs and degradation of the environment. The conventional forms of environmental litigation, however strong on normativity, are frequently poorly placed to settle these conflicts in the speed, accessibility, and involvement that they require.

This paper has conceded that the Alternate Dispute Resolution (ADR) mechanisms provide a feasible and more than satisfactory avenue of settling climate related disputes. The ADR processes have potential to supplement official legal frameworks with their focus on consensus-building, inclusivity, and flexibility, empowering the local communities, safeguarding ecological concerns, and speeding up the process of adhering to climate commitments.

Since forest rights mediation in rural India, and international environmental arbitrations, under the Permanent Court of Arbitration and ICSID, ADR has demonstrated its flexibility in a wide variety of legal and cultural and jurisdictional contexts. However, this pledge is softened with severe constraints: inequality of power, absence of enforcement, technological inadequacy, and the absence of difficult assimilation into juridical law. These problems should be addressed via institutional change, capacity building as well as strong legal structures which would entrench ADR in national and international climate governance structures.

Another way that the article has made was the critical interconnections between ADR and the Sustainable Development Goals (SDGs) and specifically Goals 13, 16, and 17. When properly institutionalized, ADR can play, not only as a tool of dispute resolution, but as a groundbreaking tool of environmental justice, sustainability, and peace.

To sum up, scrambling towards compliance with the global community, ADR as a strategy to resolve disputes, negotiate, and reform the government is not only recommendable but essential. Climate justice of tomorrow might most likely rely on our capacity to solve disputes not within a confrontational manner, but within a collaborative manner.

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