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Artificial Intelligence and Climate Governance: The Emerging Politics of Data-Driven Environmental Policy

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Abstract

Artificial intelligence (AI) had emerged as a transformative force in climate governance, reshaping the design and implementation of environmental policies through data-driven decision-making and predictive analytics. This study examined the role of AI in climate governance and explored the political, ethical, and institutional implications of data-driven environmental policy frameworks. Using a qualitative research design based on thematic analysis of secondary data, the study analyzed how AI technologies influenced policy effectiveness, governance structures, and power dynamics. The findings indicated that AI had enhanced climate governance by improving real-time monitoring, predictive capabilities, and policy responsiveness. However, the integration of AI also introduced significant challenges, including algorithmic bias, lack of transparency, data inequality, and accountability issues. The study further revealed that AI-driven governance had reshaped power relations by concentrating data and technological control among a limited number of actors, raising concerns about equity and inclusivity, particularly in developing regions. The study concluded that while AI offered substantial potential for improving climate governance, its effectiveness depended on the development of inclusive, transparent, and ethically grounded policy frameworks. It emphasized the need for regulatory mechanisms, stakeholder engagement, and capacity building to ensure responsible AI adoption. The research contributed to the growing discourse on AI and environmental governance by highlighting the importance of balancing technological innovation with social justice and sustainability objectives.

Keywords: Artificial Intelligence, Algorithmic Governance, Climate Governance, Data-Driven Policy, Environmental Sustainability

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1. Introduction

Artificial Intelligence (AI) had become a powerful factor transforming the climate governance landscape, making the design, implementation, and even assessment of environmental policies in new ways. The usual environmental governance systems were usually limited in scale due to the inadequate data fragmentation, slow decision-making, and limited predictive functions. Meanwhile, AI-enabled solutions made real-time monitoring of the environment, predictive modeling of the climate, and automatic enforcement of policies more efficient and responsive in governance structures (Mehryar et al., 2024; Othman, 2024). Consequently, it had already become common to find governments and other international bodies having to consider implementing AI-driven solutions to climate plans to deal with the intricate environmental issues.

The increased dependence of AI in governing the environment had also transformed the politics of climate regulating. The impact of data-driven solutions was that the policy-makers were able to make decisions that utilize massive datasets related to the environment, which would make the climate risks estimates more accurate and less uncertain (Men & Liu, 2026). Such change to algorithmic governance also created new power relations in which decision-making authority would be more dependent upon technological infrastructures and ownership of data. The issues of transparency, accountability, and inclusivity were given the focus of the discussion on AI-driven climate governance.

The introduction of AI in climate governance had elicited serious ethical and socio-political issues. Algorithms bias, inequality of data and little representation of vulnerable groups in the datasets would reinforce the already present environmental inequities (Joseph, 2025; Anand and Coeckelbergh, 2026). These concerns pointed to the danger of these AI systems being used to make marginalized populations even more marginalized despite the fact that it would boost efficiency, especially in the Global South. Political implications of AI implementation fell beyond the scope of technical performance to the issues of the wider scope of equity and justice.

The social effects of AI as such had become an urgent issue. Computational intensity of the AI systems, energy usage, and hardware hardware extraction added to the estimation of carbon emission and ecological degradation (Kelly, 2022; Anand and Coeckelbergh, 2026). This contradiction, AI being the solution to the problem of climate change and at the same time the cause of it, highlighted the multifacetedness of applying AI to the topic of sustainability. The interaction of AI with data politics with environmental governance became a critical understanding of creating productive and fair climate policies.

Background of the Study

Climate governance had transformed greatly in the last decades, shifting the state-focused regulation to more multifaceted multi-actor governance models. These perceptions entailed a concerted effort by governments and the private sector as well as the international institution to deal with climate change. Nevertheless, conventional governance systems were not always influential in handling the size and complexity of climate information, and they promoted weak politics of governance (Othman, 2024). They have brought AI technologies to address these issues and provide more sophisticated ways of data analysis and predictions.

Environmental governance through AI had allowed the creation of advanced climatic risk analysis and assessment, resource management, and environmental surveillance tools. The large volumes of data had been analyzed by machine learning models and patterns recognized, as well as projected future climate scenarios to be more precise (Mehryar et al., 2024). This progress enabled the level of proactive instead of reactive strategies to be taken by policy makers, extending resilience and adaptive capacity in response to climatic change.

Simultaneously, the incorporation of AI into their governance structures had raised the levels of political and institutional complexity to a new scale. Algorithms systems were not purely technical but also a kind of a socio-political tool that affected the interpretation and response to environmental data (Ali et al., 2026). This evolution provoked the issue of concentration of power among the technology providers and data controllers, which might hurt the democratic rule and involvement of people in making of environmental decisions.

The spread of AI technologies around the world had made the gap between the developed and developing countries in technology capacity and access to data very noticeable. Whereas developed economies have been enjoying strong AI infrastructures, a significant number of growing areas were dealing with issues concerning data accessibility, technical load, and regulation systems (Anand and Coeckelbergh, 2026). The digital divide had a climate justice implication since access to AI technologies, based on an unequal way, could impact more inequalities in climate adaptation and mitigation efforts already present.

Research Problem

Regarding the increasing use of AI in climate governance, there were considerable gaps in the knowledge of its political, ethical, and institutional implications. Although AI technologies increased efficiency and predictive accuracy, they received serious concerns in governance systems in terms of transparency, accountability, and fairness. The processes of algorithmic decision-making were not very explainable and it was challenging to determine the reliability and implication of AI-generated results by the policymakers and stakeholders. The augmenting use of data in government had made challenges concerning data proprietorship, inequality as well as inclination. The reliance on big datasets in AI systems has created unequal power and influence since the volume is often managed by a few individuals. Specifically, they were acute in developing areas, where the lack of access to quality data and technological tools could prevent an efficient involvement in climate governance on the basis of AI.

The study has several research objectives and questions. Firstly, it aims to examine the role of artificial intelligence in transforming climate governance and environmental policymaking. Secondly, it seeks to analyze the political implications of data-driven environmental policies, particularly in relation to power, accountability, and decision-making. Thirdly, it evaluates the ethical challenges associated with AI adoption, including algorithmic bias and data inequality. Fourthly, it assesses the impact of AI on climate justice, especially in the context of developing countries. Correspondingly, the study addresses the following research questions: how has artificial intelligence transformed climate governance and environmental policymaking; what are the political implications of data-driven environmental policies; how do algorithmic bias and data inequality affect AI-driven climate governance; and what challenges does AI pose for climate justice and equitable policy outcomes. The literature review focuses on the AI-driven transformation of climate governance.

AI-Driven Transformation of Climate Governance

The field of climate governance had been dramatically changed by artificial intelligence as it was now possible to regularly monitor the environment, as well as forecast anything, using data. The types of data that were analyzed using AI-based systems began to grow to large climate datasets, which enabled policymakers to predict the risks associated with the environment and develop the adaptive plans more

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precisely. The technological changes have altered the reactive infrastructure of governance to proactive ones, enhancing the efficiency with which decisions were made and making policies responsive (Mehryar et al., 2024; Sharma and Singh, 2024). Owing to this, AI was now a particularly significant instrument in combating multifaceted environmental issues on both national and international spaces.

The use of AI-based governance systems had assisted in incorporating real-time information in the environmental policymaking procedures. Machine learning algorithms were able to establish trends in climate data that would not have been observable in the traditional method of analysis. This allowed better climate predictions and better strategies of resource allocation. Another alarming aspect was that the growing usage of algorithmic systems resulted in the existence of excessive dependence on the technology infrastructure and the decrease of human control in decision making (Batool et al., 2025; Dwivedi et al., 2023).

AI had helped in the development of data-driven models of environmental governance that were focused on efficiency and optimization. These models depended on automated systems to monitor the emissions and control the use of energy and administer the environmental regulations. Although the given systems have increased the capacity of governing, they also transformed the role of human actors in the processes of environmental governance, which provoked discussions concerning the presence of balance between the automation and the democratic engagement into the policy-making process (Vinuesa et al., 2020; Randeniya et al., 2025).

Algorithms in Ethics and Bias Governance with AI

The adoption of AI in climate governance had provoked serious ethical issues, mainly on the aspect of algorithmic bias and fairness. training data played a central role in the AI systems, and data used was often biased towards the current social and environmental inequalities. Consequently, biased datasets may cause biased policy results, which would impact vulnerable populations in an unequal manner. It was especially important in the sphere of climate governance in which decisions had a long-term and extensive impact on the society (Floridi et al., 2018; Gebru et al., 2021).

Accountability and transparency had turned out to be significant concerns within AI-based systems of governance. The majority of AI models were black boxes, and it was hard to know how the decisions were made by them by the policymakers and stakeholders. This incapacity to explain diminished trust in AI systems and reduced their adoption in the realms of the public policy. Researchers stated that the concept of explainable AI (XAI) frameworks was necessary to make the decision-making procedure open and responsible (Rudin, 2019; Batool et al., 2025).

The principles of fairness, inclusivity, and human rights had to be integrated into technologic systems, which was necessary to make ethical AI governance. Nevertheless, the current systems of governance were usually more concerned with technical performance aspects as opposed to ethical concerns hence loopholes during the implementation of responsible AI. Lack of uniformity in ethical rules in various areas made it more even more difficult to establish uniform and fair AI regulation practices (Jobin et al., 2019; Fjeld et al., 2020).

Climate Governance Politics of Data, Power, and Inequality

The implementation of AI in climate management had changed the relations of power through centralizing the control over data and technological infrastructure. Big tech and developed countries tended to have more access to data and more capabilities of AI that allows them a pre-eminent place in the determination of environmental policy. The concentration of power prompted the need to focus on the issues of marginalization of weaker regions as well as the loss of the democratic process of governments (Couldry and Mejias, 2019; Kshetri, 2021).

Models of governance that depend on data had increased the problem of data ownership and access. The environmental information upon which the AI systems were built was usually managed by a few actors, leading to unequal distribution of decision making powers. These inequalities influenced the performance of the developing countries in global climate governance, and as a result aggravated the existing disparities in climate adaptation and mitigation (Birhane, 2020; Acemoglu and Johnson, 2023).

Political consequences of AI-driven governance reached the accountability and legitimacy issues. With more and more automated decision making processes in place, responsibility in policy outcomes became more difficult to allocate. This change put into question the traditional forms of governance and brought up issues of thinning of the civic confidence in the environmental institutions. Researchers stress that there was a necessity to develop inclusive governance models which provided fair and open participation and transparency in AI-based policymaking on climate (Jasanoff, 2016; Rahwan, 2018).

2. Method

2.1 Study Design

The research design was a qualitative study to investigate how artificial intelligence can be applied in the governance of climatic conditions and the data-oriented politics of environmental policy. At least a qualitative approach was deemed necessary because it made it possible to gain a deeper insight into the multifaceted socio-political and technological relations related to the AI implementation in environmental management. The case-based analytical framework utilized in the study particularly allowed investigating the practical implementation of AI in climate policy and governance frameworks in the actual world. Such a design promoted an in-depth understanding of institutional practices, development of policies and governance issues in a variety of settings.

2.2 Research Approach

The study adopted an interpretivist methodology in the research design since the study sought to examine the perceptions of AI technologies on their implementation, governance, and use in the framework of environmental policies. This method focused on meaning, meaning and power relation in data-based governance systems. It enabled the researcher to be critical of the relationship between technological innovation and political decision-making process. Another ethical implication of AI adoption that was explored with the help of the interpretivist perspective was its relationship with ethical issues, institutional processes, and governance.

2.3 Data Collection Methods

The research was based on the secondary data collection method, using a large variety of reliable sources, such as peer-reviewed journal articles, policy reports, institutional sources and documents provided by international organizations. The databases used included Google Scholar, ScienceDirect, Springer, and ResearchGate as well to ensure there was the inclusion of quality and recent academic work. Besides this, documents of international bodies like climate governance agencies and technology control authorities were also analyzed to present feasible information on how AI can be used in the making of environmental policies. The approach allowed the researcher to obtain as broad and various views on the topic as possible.

2.4 Sampling Technique

A purposive sampling method was used in order to pick the literature and case material. Sources were selected according to their interest to the objectives of the research, dates of publication (mostly not older than

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2018), and contribution to the area of artificial intelligence, climate governance and environmental policy. Peer reviewed journal articles and high impact publications received priority to guarantee the reliability and validity of the data. This selective method enabled the research to pick up the most important and informative data pertaining to AI-driven climate governance.

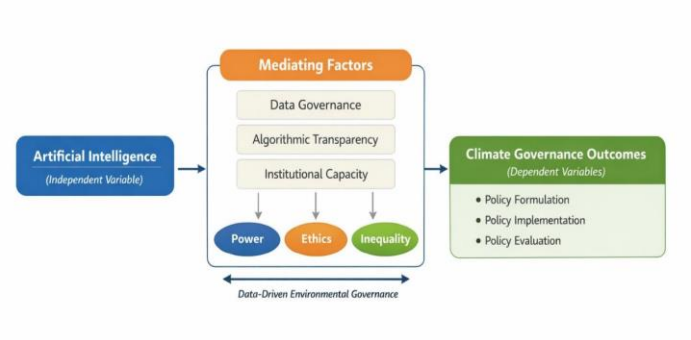
2.5 Data Analysis Technique

Thematic analysis was used to analyse the data collected. This approach was done through a systematic identification, organization, and analysis of main themes associated with the integration of AI, governance systems, ethical issues and political aspects. This action was performed through the process of coding the data, identifying repeating patterns, and summarizing results into consistent themes. The thematic analysis has helped the researcher to derive meaningful insights using a wide variety of data sources and also to demonstrate the links between AI technologies and systems of climate governance.

2.6 Analytical Framework

The analytical framework used to shape the study connected the artificial intelligence (independent variable) and climate governance outcomes (dependent variable) to each other, which was mediated by data governance, algorithmic transparency, and institutional capacity. This framework gave an organized approach in how AI affected the policy making, implementation, and evaluation procedures. It also included the aspect of power, ethics and inequality to monitor more broad political outcomes of data-driven environmental governance

Figure 1 Theoretical Framework Model



3. Results

The analysis focused on key dimensions, including AI adoption in climate policy, governance effectiveness, ethical challenges, and political implications. The results were organized into thematic categories and supported with structured tables to enhance clarity and interpretation.

AI Adoption in Climate Governance

This table examined the extent to which artificial intelligence had been integrated into climate governance systems and environmental policymaking processes.

Table 1

AI Applications in Climate Governance

AI Application Area	Description	Governance Impact
Climate Modeling	Predictive analytics for climate forecasting	Improved policy planning and preparedness
Smart Monitoring	Real-time environmental data tracking	Enhanced regulatory compliance
Resource Optimization	Efficient allocation of energy and resources	Reduced environmental waste
Disaster Prediction	Early warning systems for climate risks	Strengthened disaster response
Emission Tracking	Automated carbon monitoring systems	Better emission control policies

The results showed that artificial intelligence was now generally accepted in a wide variety of climate governance spheres. Climate modeling and predictive analytics AI had much better informed the policymakers on how to predict environmental changes and proactively described strategies. It was this transition to predictive, rather than reactive governance that had increased the efficiency in the climate policies and minimized the uncertainty in the environmental decision-making. The introduction of real-time monitoring systems had heightened regulatory frameworks because they could monitor the environmental indicators at all times. The smart technologies in monitoring had made the enforcement of the environmental laws easier and more transparency in the governance process had been enhanced. This had led to a greater level of accountability among the industries and institutions that handle environmental compliance.

Governance Effectiveness and Policy Outcomes

This table analyzed how AI integration had influenced the effectiveness of environmental policies and governance structures.

Table 2.

Impact of AI on Climate Governance Effectiveness

Governance Indicator	Before AI Integration	After AI Integration
Decision-Making Speed	Moderate	High
Policy Accuracy	Limited	Improved
Data Availability	Fragmented	Integrated
Transparency	Low	Moderate to High
Policy Adaptability	Reactive	Proactive

The findings revealed that there was a comprehensive increase in governance effectiveness after the adoption of artificial intelligence. The ability to access real-time data and automated analytical instruments had made the process of decision-making more productive and efficient. This had led to policymakers becoming more responsive and capable of responding appropriately to environmental challenges and responding in time. The accuracy of the policies was improved because AI systems would supply data-driven advice and predictive model systems. The shift to integrated data systems at the expense of the fragmented systems had increased the quality of environmental estimates and the policymaking process based on evidence. This had lowered the chances of failure of the advancing policies and the overall performance of governance. The results suggested the increase of transparency and flexibility in the governance systems. The able AI platforms had also enabled more access

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to environmental data and enhanced transparency and accountability by the people. Simultaneously, the governance structures had become more flexible enabling the policymakers to reposition the strategies with changing environment conditions. The mentioned changes highlighted how AI positively affects the effectiveness of climate governance.

Figure 2. AI Applications in Climate Governance

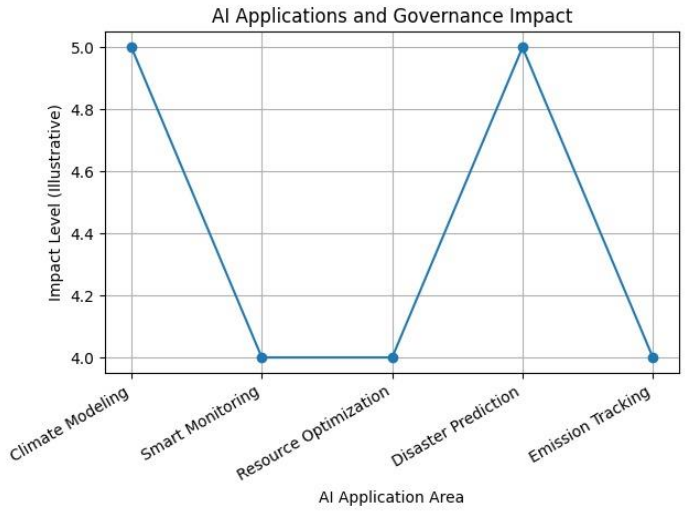
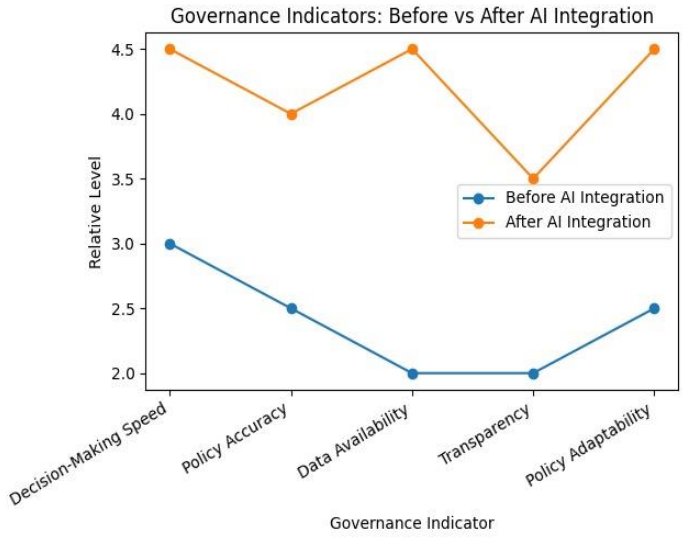


Figure 3. Impact of AI on Climate Governance Effectiveness



Ethical Challenges and Algorithmic Risks

This table explored the ethical concerns associated with the use of artificial intelligence in climate governance.

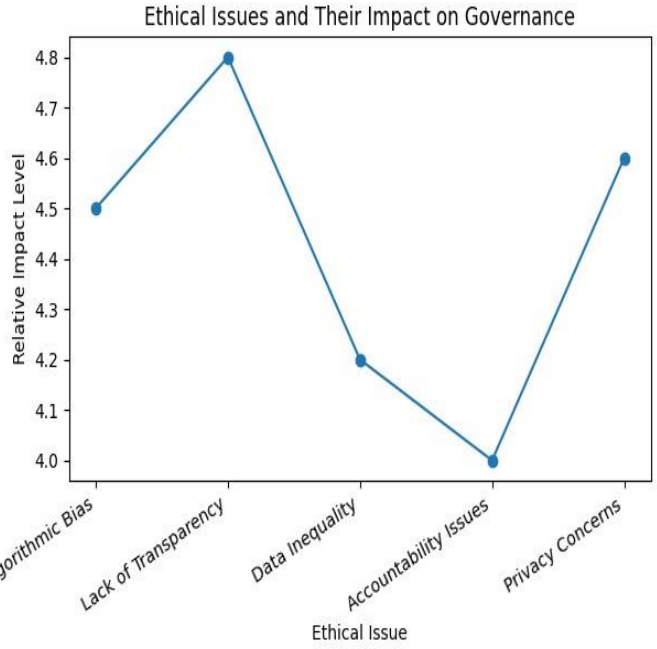
Table 3.

Ethical Challenges in AI-Driven Climate Governance

Ethical Issue	Description	Impact on Governance
Algorithmic Bias	Bias in data affecting AI outputs	Unequal policy outcomes
Lack of Transparency	Black-box decision-making systems	Reduced trust in governance
Data Inequality	Unequal access to quality data	Marginalization of developing regions
Accountability Issues	Difficulty in assigning responsibility	Weak governance structures
Privacy Concerns	Misuse of environmental and personal data	Ethical and legal challenges

The results found that incorporation of AI into climate governance had posed a number of ethical challenges. The issue of algorithmic bias was now seen as a pressing area of research since biased data might cause unequal policy and result, and strengthen social and environmental disparities. The issue had especially impacted communities that are vulnerable, and this has led to the concern of equity and inclusivity in climate governance. This transparency issue with AI systems had created distrust in the processes of governance. Lots of AI models became black boxes, and it was hard to understand the process of decision making by the stakeholders. This unaccountable character had restricted the acceptability of AI-influenced policies and questioned the accountability and legitimacy in environmental policy-making.

Figure 4. Ethical Challenges in AI-Driven Climate Governance



Political Implications of Data-Driven Environmental Policy

This table examined the political dimensions of AI-driven climate governance, focusing on power dynamics and institutional changes

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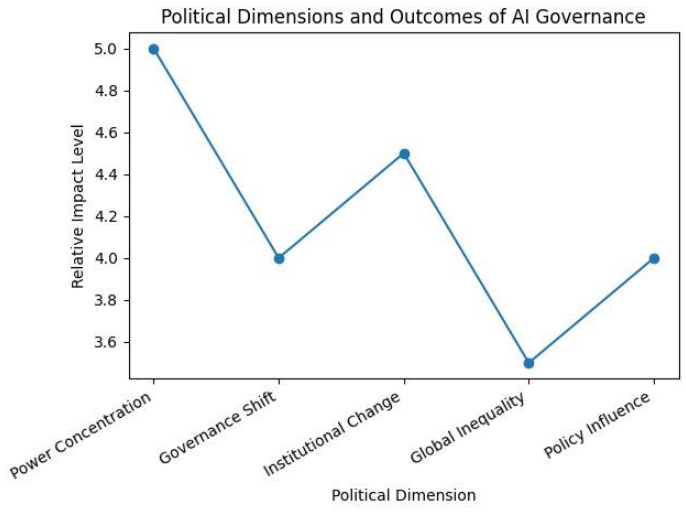
Table 4

Political Implications of AI in Climate Governance

Political Dimension	Description	Outcome
Power Concentration	Control of data by few entities	Increased inequality
Governance Shift	From human-led to algorithmic decision-making	Reduced human oversight
Institutional Change	Adoption of digital governance systems	Structural transformation
Global Inequality	Uneven AI adoption across countries	Climate justice concerns
Policy Influence	Role of tech firms in policymaking	Altered decision-making authority

The findings provided evidence that climate governance based on AI had completely changed the balance of power by concentrated power in data-rich institutions and technology providers. This accumulation of power had brought about issues over inequality and marginalization of the underdeveloped areas. The management of data and technological infrastructure had become a major driver on environmental policymaking. The turn of the decision process driven by human factors to algorithms has changed the governance forms. Although AI systems had enhanced productivity, they had also taken away human control and augmented mechanized actions. This change had pushed crucial concerns of accountability and human judgment in policy making. Its implications on a global climate regulation were pointed out in the findings. The disparite in access to AI technologies had increased the global inequalities, specifically, between developed and developing nations. The increasing power of technological firms in environmental policy formulation had made their governance procedures more complex focusing on the necessity of inclusive and open policy frameworks.

Figure 5. Political Implications of AI in Climate Governance



4. Discussion

The results showed that artificial intelligence has redefined the manner in which climate was governed through increased efficacy and suitability of environmental policymaking. The use of AI had facilitated real-time analysis of data, predictive modeling, and automated monitoring that went a long way in improving the capabilities of governments to respond to issues related to climate. These findings conformed to previous works highlighting the use of AI to enable informed decision-making and enhance the environmental performance (Rolnick et al., 2019; Gupta et al., 2023).

The introduction of AI technologies had subtly transformed governance models to proactive ones. Predictive analytics had gained popularity among policymakers to foresee the risks of the environment and take preventive actions. This shift had made climate decision-making less uncertain and had helped to increase the flexibility of governance systems. The same has been observed in the previous studies that emphasized the significance of predictive technologies in improving climate resilience (Reichstein et al., 2019; Davenport and Ronanki, 2018).

The discussion also found out that AI had enhanced coordination among various stakeholders engaged in climate governance. The AI systems had also helped the cooperation between the governments, international organizations, and the actors of the private sector by offering a single data platform. This integrated practice had maximized the effectiveness of policy implementation and innovative integrated governance practices. The same information has been reported in the previous studies that said that digital technologies were essential in promoting multi-level governance and institutional coordination (Khan et al., 2022; Wirtz et al., 2021).

There were also new issues of technological dependency in the context of the dependence on AI technologies. The system of governance was more dependent on computer algorithms and software, which brought up the question of system weakness and strength. This interdependence had posed the possible risks in the event of technological breakdowns or cyber threats which would soon interfere with the governance procedures. These risks had been noted by existing sources as well, and the necessity to have strong technological defenses (Bostrom and Yudkowsky, 2014; Cath et al., 2018).

The results indicated that AI increased the efficiency of the governance, but it did not necessarily provide fair results. There were also regional and population inequalities in the effectiveness of climate governance because the benefits of AI adoption were not equally distributed across the regions and populations. This fact supported the idea that lasting and fair results should be found using technological solutions and inclusive policy frameworks (Brynjolfsson and McAfee, 2017; Hickel, 2020).

The authors state that the implementation of AI in climate governance has already introduced important ethical issues, in terms of both algorithmic biasness and fairness. Artificial intelligence systems had utilized the past and environmental data, which were usually biased. Consequently, such systems produced policy choices that could support the status quo in bringing about inequalities. This was in line with other studies that accentuated the dangers of biased AI systems in the area of public policy (O'Neil, 2016; Mittelstadt et al., 2016).

Lack of transparency in making decisions using AI had become an issue of concern. Most AI models were regarded as opaque systems where stakeholders cannot clearly comprehend how their decisions were arrived at. This inexplicability had contributed to a loss of confidence in AI-based governance and the problem of accountability. The same issues were already discussed in some earlier works that highlighted the need to have explainable AI to achieve transparency and enhance public trust (Doshi-Velez and Kim, 2017; Lipton, 2018). This uncertainties had made governance systems more complex and posed a problem to the regulation frameworks. The same previous studies had already pointed out that diffusion of responsibility of the AI systems has been a big

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challenge in terms of governance and legal responsibility (Pasquale, 2015; Kroll et al., 2017).

The application of environmental monitoring by using big datasets had brought to question the issue of data ownership and misuse of the sensitive information. These issues had highlighted the role of hard data protection rules and codes of ethics. The literature that was present had also emphasized the need to protect data privacy regarding the use of AI (Zuboff, 2019; Taddeo and Floridi, 2018). The results implied that the effective deployment of AI in climate governance was based on the ethical considerations. The positive aspects of AI may be debunked by morale and ethical concerns, unless the problems of prejudice, openness, and responsibility are considered. This strengthened the necessity of the multifaceted ethical frameworks to inform AI-based environmental policymaking (Morley et al., 2020; Floridi et al., 2018).

The findings showed that AI-based climate governance had greatly transformed the nature of power accumulation through the centralization of data and technological assets. This position of big technology companies and developed nations in the world of governance had acquired a hegemonic role in access to advanced AI potential. This consolidation of power had brought up the issue of marginalization of the less developed areas. The same tendencies have previously been found in literature on the subject of data capitalism and digital inequality (Srnicek, 2017; Couldry and Mejias, 2019).

The environmental data had become a resource to reckon with; and ownership of the information had had an impact on the control of decision making in the climate governance. This had led to the asymmetry of power such that the developing countries were no longer able to take part in the global climate policy making. It was also emphasized in previous literature that the result of data ownership has implications on governance and equity (Kshetri, 2021; West, 2019).

Moreover, due to the implementation of AI technologies, the role of the actors of the private sector in climate governance was swollen. This made technology companies influential in making policy decisions since they were involved in creating AI systems and controlling their work. This tendency had put questions of the privatization of governance and conflict of interests. It was also reflected in the existing literature where private actors gained increasing influence on the establishment of the policy that would be delivered by the state (Stone et al., 2020; Zysman and Kenney, 2020). This programme had to make sure that there should be fair access to both data and technology to facilitate inclusive and equitable policy results. This necessitated global collaboration and policy interventions that would help in the minimization of technological gaps, as well as the improvement of international governance structures (Fukuda-Parr and McNeill, 2019; Castells, 2010).

The paper highlighted why inclusive and sustainable governance systems must be used to direct the adoption of AI in climate leadership. The frameworks should have created a balance between technology innovation and ethical concerns so that AI systems were responsibly and fairly used. The results recommended that the models of governance are to be infused with the concepts of transparency, accountability, and inclusiveness to increase their efficiency. The view was backed up by earlier studies that argued in favor of responsible AIs (Leslie, 2019; Stahl, 2021).

More than that, it is the establishment of regulatory frameworks that, according to the development, played a vital role in ensuring the ethical use of AI. The international bodies and governments had already initiated the introduction of guidelines and policies to control the use of AI in environmental governance. All these were done to solve the problem of bias, privacy, and accountability and advance innovation. Other studies on the regulation and governance of AI had also discussed similar initiatives (Veale and Borgesius, 2021; Gasser and Almeida, 2017).

The relevance of stakeholder involvement in AI-driven governance, was also mentioned in the discussion. Engagement of a broad-based stakeholders, such as local communities, policymakers, and creators of technologies, was critical in ensuring that the systems of AI shared a broad variety of views. Such a strategy could contribute to establishing the credibility and approval of AI-policies. Past studies had also focused on how participatory governance can help solve complex environmental issues (Dryzek et al., 2019; Newig et al., 2018).

The main strategies mentioned are capacity building and knowledge sharing as the ones to foster equitable AI implementation. To be involved in AI-based climate governance, developing nations required assistance in the form of technical skills, structures, and data connectivity. The key to eliminating the digital divide was international cooperation and knowledge transfer programs. Previous research also managed to mention the significance of capacity building as a means of attaining sustainable development goals.

Lastly, the findings indicated that sustainable governance of AI meant taking the holistic approach to involving technology, ethical, and political aspects. The policymakers had to reflect on the overall societal effects of the use of AI, and make sure that the governance system was in line with sustaining objectives. It was necessary to include this holistic view in order to achieve a maximum positive impact of AI and reduce the maximum negative effect on climate governance (Vinuesa et al., 2020; Rolnick et al., 2019).

Conclusion

The paper has explored the application of artificial intelligence to climate governance and the politics of the rising data-driven environmental policy. The results indicated that AI had overhauled environmental governance by increasing its processing power, predictive precision and provided the ability to monitor environmental systems in real time. These developments had enabled policymakers to become proactive than reactive and this has increased the efficiency and responsiveness of climate policies. The research also found out that the introduction of AI into the climate governance system had created intricate ethical, political and institutional problems. Such problems as algorithmic bias, untransparency, inequality of data and accountability gap were now critical issues. Such obstacles could compromise the efficacy and equity of the AI-supported policies of the environment and especially where governments lacked effective or were poorly developed governance structures.

Recommendations

Some recommendations to make AI-oriented climate governance more efficient and reasonable were made based on the study results. It was initially suggested that the policymakers should come up with holistic regulatory frameworks to guide the application of artificial intelligence in environmental policymaking. These frameworks must deal with the problems of transparency, accountability, and ethical principles, which mean that AI systems were implemented in a responsible and reasonable way in accordance with the goals of sustainability. Second, attempts should be made to ensure transparency and explicability of AI systems. The use of explainable AI models would assist stakeholders to have a better understanding of the processes involved in decision-making and thus enhance trust and accountability within governance systems. Third, it was proposed that the governments and the international organizations should invest in capacity building and technological infrastructure mainly in the developing country. The availability of data, technical skills and digital resources should be increased, and this would minimize

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disparities and allow bigger participation in international climate governance.

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