

# ISDS Processes and Environmental Concerns While Harnessing the Potential of AI for Sustainability

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This paper explores the potential of AI to resolve issues within the ISDS system, highlighting its role in promoting sustainable development and addressing environmental concerns. AI can evaluate arbitrators' expertise in cross-border investment disputes, ensuring they have expertise in public international law and a background in the domestic laws generally. It emphasizes on help and determines if the arbitrator has a fair and impartial stance when adjudicating the case, rather than favoring investors or industries. AI can verify education, political affiliation, and remuneration, impacting fair judgement. ISDS procedures can use AI-generated papers to support sustainable development decisions. AI can potentially challenge environmental policies and compensation amounts, potentially causing conflicts with investors. It can also check false data, potentially influencing people's opinions, a potential drawback in promoting sustainable development and addressing environmental issues.

*Keywords:* investor-state dispute settlement, artificial intelligence, environmental concerns

## Introduction

Most of the time, the ISDS process leads to decisions that hurt the host-states' efforts to create a framework for organizing civilization and human activities in a way that lets society, its people, and its economies meet their needs and reach their full potential in the present, while also protecting biodiversity and natural ecosystems and planning and acting to keep these important resources for future generations (Vattenfall v. Germany (II), International Institute for Sustainable Development, 2012). However, the ISDS system does not provide a means to ensure fair treatment and promote investment for sustainable development in cases where investors unjustly impede host states involved in renewable energy projects (Vattenfall v. Germany (II), International Institute for Sustainable Development, 2012).<sup>1</sup>

Empirical data support the claim that several environmental concerns are of worldwide importance in terms of investment (Zhou & Jin, 2023). The expansion of cultivable land is minimal, and a significant amount of

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<sup>1</sup> Vattenfall v. Germany (II), International Institute for Sustainable Development. (2012). "Vattenfall filed a second investor-state claim against Germany in 2012, demanding \$5 billion in taxpayer compensation for the country's decision to phase out nuclear power. The company claims this violates its obligations to foreign investors under the Energy Charter Treaty. Despite Germany's attempts to halt the claim, the investor-state tribunal allowed it to proceed in 2013".

current agricultural land is experiencing a decline in fertility (Willy, Muyanga, Mbuvi, & Jayne, 2019). The grassland has had excessive grazing, the fisheries have been excessively exploited, water sources have undergone significant depletion, and pollution is limiting food production as a result of foreign direct investment in developing countries (S. Wang, H. Wang, & Sun, 2020). According to Human Development (2006), around 1.2 billion individuals in developing nations are experiencing extreme poverty and lack access to safe water. Additionally, 2.6 billion people lack proper sanitation or clean water, leading to the annual deaths of three million children (United Nation Department of Economic and Social Affairs, 2007).

Examining from this standpoint reveals the necessity of addressing environmental concerns inside the ISDS process, encompassing the possible consequences of tackling issues like environmental deterioration and pollution on populations and ecosystems. Hence, it is necessary to carefully examine the involvement of IITs and agreements and declare them flexible in advancing sustainable practices via the ISDS system. This would greatly aid in identifying and evaluating innovative approaches to addressing environmental issues that can have a positive impact on the long-term and short-term economic and social welfare of current and future generations (Zhou & Jin, 2023).

That being the case, the UN Charter, codified in 1945, is the highest stage among nations, ensuring pace in a rapidly changing world. It guides more than 193 member states, making the UN a unique platform for global gathering, discussing common problems, and finding shared solutions on a matter including environmental concerns.<sup>2</sup> As a result of the development of science and technology while considering Sustainable Development Goals, the UN provides a guideline framework for countries to integrate AI technologies into their development strategies.<sup>3</sup> This shows that the world is already changing direction, and regions such as the EU have set guidelines for the ethical use of AI in data processing.<sup>4</sup> Hence, through AI, sustainable development goals have been archived and implemented in some nations, including efficiency, cost savings, and improved decision-making processes (Human Research Protection Office, 2024). However, the UN faces challenges in implementing AI guidelines for sustainable development due to the lack of international consensus on applicable legal standards that can be used as an enforcement mechanism and provide assurance on the use of AI for sustainable development.<sup>5</sup>

Therefore, this paper is prompting a call for a major solution based on international regulatory frameworks, not only to the UN but also to parties to it. Hence, I feel scholarly provoked to address the ISDS process in relation to environmental concerns that arise from the IITs or IIAs and the ICSID Convention<sup>6</sup> as a regulatory framework, while also addressing the importance of AI for sustainability (McNulty, 2024). Everything that follows is covered in these sections: AI, sustainable development, and environmental concerns. The implications of Investor-State Dispute Settlement (ISDS) on environmental issues highlight the challenges posed by investment disputes to environmental regulations and sustainable development (Mann & von Moltke, 2020). The impacts of ISDS on environmental concerns often involve conflicts between investor protections and

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<sup>2</sup> UN Charter on June 26, 1945, in San Francisco, at the conclusion of the UN Conference on International Organizations, came into force on October 24, 1945.

<sup>3</sup> (A/78/L.49) 2024.

<sup>4</sup> The General Data Protection Regulation (GDPR) of 2016 went into effect on May 25, 2018.

<sup>5</sup> (A/78/L.49) 2024.

<sup>6</sup> The Convention on the Settlement of Investment Disputes between States and Nationals of Other States (ICSID/April 15, 2006) (from now on, referred to as the ICSID Convention).

environmental policies, raising questions about regulatory balance (Tienhaara, 2018). Exploring the role of artificial intelligence (AI) in addressing these environmental concerns, this discussion investigates how AI might help mitigate these challenges for example, by improving dispute resolution efficiency or analyzing environmental risks (Smith & Chen, 2023). The advantages of using AI in ISDS to promote sustainable development include enhanced data-driven decision-making, increased transparency, and the potential to align investment disputes with broader environmental goals (Sattorova & Orazgaliyev, 2023).

### **The Concept of AI, Sustainable Development, and Environmental Concerns**

AI, artificial intelligence, is known as the branch of computer science which makes the computers imitate closely the human behaviour, and assist humans for better performance in the field of science and technology (Ghosh & Thirugnanam, 2021). The particular objectives of AI include emulating human intellect, resolving knowledge-intensive problems, constructing computers capable of executing activities that need human intelligence, and developing autonomous learning systems. Machine learning and deep learning are distinct branches of artificial intelligence (AI) that employ advanced algorithms and multi-layer neural networks, respectively, to address complex problem-solving tasks (Ghosh & Thirugnanam, 2021). Whereas, sustainable development refers to the strategies that must be implemented in order to ensure that the requirements of the present generation are met without compromising the ability of future generations to satisfy their own needs. This implies that the survival and prosperity of future generations rely on the support and cooperation of preceding generations in creating a more environmentally friendly world (Naseer, 2023).

The increasing need for efficiency, precision, and cost-efficiency has been consistently motivating the integration of AI in the field of law. Advanced legal practitioners are currently utilizing AI-powered solutions for various activities, such as contract examination, legal investigation, anticipatory analytics, and document mechanization (Mishra, 2024). AI has the potential to optimize operations, improve decision-making processes, and provide more accessibility to the ISDS system. The incorporation of AI technology presents substantial difficulties for current legal systems, which are far from technological difficulty (Isaya Laltaika, 2024). The fast improvements in AI frequently outpace the ability of traditional laws to adapt, resulting in ambiguity and confusion surrounding issues of responsibility, accountability, and ethical norms. As a result, governmental bodies vested with the power to promulgate laws worldwide are struggling to develop extensive legislation to control the use of AI (Biden, 2021).

Additionally, the term environmental concern is the measure of individuals' awareness and apprehension over environmental concerns related to the natural world that threaten ecosystems, biodiversity, and overall environmental health (Fiveable Inc., 2024). It may also be described as an assessment of the impact of one's actions on the surrounding environment (Fransson & Garling, 1999). Environmental concern is pertinent to both environmental change and the need for governmental oversight and other adjudicatory bodies of environmental conservation to protect it (Pawlik, 1991). It can encompass: seeing environmental issues as significant; endorsing governmental initiatives to safeguard environmental quality (Environmental Protection Agency, 2024), participating in activities that strive to enhance the condition of the environment, by acknowledging the deterioration of the environment, such as the lack of water, caused by forces such as urbanization, industrial investment, and population increase, being concerned about the environmental integrity of air, water, and soil,

and conducting an analysis of the detrimental impacts of conventional farming in contrast to organic farming (Arcury & Christianson, 1990).

### **The Impacts of AI on the ISDS Process and Environmental Concerns**

With regards to study conducted basing on this this paper is to critically examines environmental problems, within the legal framework of the ISDS process and the IITs established to regulate the interaction between investors and states (Pathak, 2019). Thus, to tackle these issues, AI was employed as the remedy for sustainability.<sup>7</sup> The development of AI and its widespread use across industries have led to the realization that AI may aid in issue resolution. The use of AI and its processes inside the ISDS system has the potential to regulate biased forums that have been established under the ICSID Convention. Thus, this paper's three main points are the ISDS system, environmental issues, and the significance of artificial intelligence (AI) in achieving sustainable development enlighten as follows.

#### **Arbitrator's Expertise in Cross-Border Investment Disputes.**

Since the majority of arbitrators have day jobs working with businesses, legal companies, or writers' journals, it's clear that we could learn everything there to know about them using AI to decide the issue. Thus, we may use AI to ensure that the arbitrators chosen to determine the issue have expertise in public international law and a background in the law (Li, 2024). Provided by Sahota (2024), that, machine learning algorithms can analyse arbitrators' backgrounds, evaluate their abilities, and pair them with ISDS processes that have unique needs. This not only shortens the hiring cycle, but it also guarantees better applicant shortlisting based on facts and figures rather than gut feelings, as well as providing for room for the fairness of the case between investor and state (Sahota, 2024). Reducing unconscious prejudice is one of the biggest benefits of AI in recruiting. Prejudices, even unknowingly, might impact conventional hiring practices (SourceBreaker, 2023). AI promotes a more fair and inclusive employment process by focusing on criteria generated by data. The firm's culture and ability to tackle legal problems are both enhanced by this dedication to diversity (Sahota, 2024).

Cemented by one of the prominents in International Investment Law jurist, Prof. Li Hua (2024), artificial intelligence can help find out whether the arbitrator isn't biased in favour of particular investors or sectors when they rule on the case. This opens the door for the use of AI to advance sustainable development in ISDS proceedings by screening potential arbitrators for bias against businesses or environmental groups. Furthermore, AI may be used to confirm a person's income, political allegiance, and level of education the latter of which could influence their impartiality and fairness in making a decision (Li, 2024).

#### **AI and Application of the Doctrine of Precedent in ISDS Process**

An essential function of the World Trade Organization is the settlement of trade disputes. Disputes emerge in the World Trade Organization (WTO) whenever one member country suspects that another member government is in breach of its commitments or agreements (World Trade Organization, 2024a). When it comes to international dispute settlement, the World Trade Organization's system is among the busiest. There have been 626 disputes presented to the WTO since 1995, and the organization has delivered over 350 verdicts (World Trade Organization, 2024b). When it comes to international treaties like the WTO and environmental

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<sup>7</sup> (A/78/L.49) 2024.

development, the ISDS is not in its current or balanced form, but having all of these things housed in one database and used in the ISDS procedure may serve as an example (Bedigan, 2024). Climate change, biodiversity loss, water contamination, and deforestation are just a few examples of environmental issues that might benefit from AI-generated relevant papers and books to back up ISDS decisions on sustainable development (Center for International Environmental Law, 2015). Hence, a well-established model might soon assist the arbitrator in making a fair judgement, free from the industry bias that was visible in the previous method (QUNO, 2020).

To guarantee that AI systems are responsible for their actions and employed correctly in environmental law enforcement and decision-making, new and adaptable solutions are needed to address the numerous concerns raised by AI technology (Collin, 2024). Like human decision-makers, AI systems should be compelled by legislation to explain their reasoning behind judgement. By doing so, we can make AI systems more open and responsible. To ensure the ethical use of AI in environmental law enforcement and decision-making, policies and regulations should be formulated. Some possible steps in this direction include mandating studies of the social and economic effects of AI systems (Collin, 2024). Concerning the potential and threats posed by artificial intelligence (AI) in the context of environmental law enforcement and decision-making, the ISDS system and litigation can help. One can use legal action to hold companies accountable for AI-related environmental harm or to contest the use of AI systems in environmental decision-making (Collin, 2024).

By reinterpreting preexisting, IITs or IIAs, statutes and regulations in light of emerging technology, the ISDS process has the power to mold the environmental law regulatory framework for artificial intelligence (Mishra, 2024). Responsible application of AI's promise to enhance environmental control requires careful consideration of ethical issues (Collin, 2024). For AI to be deployed in a transparent, equitable, and environmentally protective manner, there has to be tight cooperation between academics, businesses, environmental regulators, and policymakers (Mishra, 2024).

Knowing the legal landscape and the possible effects of AI on a company is crucial for anyone looking to invest in AI technology. Teams working in-house should make testing AI models and error handling systems a regular part of their work. In light of recent changes to regulations and recommendations from environmental authorities, businesses should plan and execute policies on the use of artificial intelligence (AI) to ensure environmental compliance. This includes details regarding the collection, storage, and sharing of data (Davis, 2020). Data show that, the Working Group examined the reform proposals during its meeting in New York on April 23-27, 2018. The proposals included revising investment treaties with ambiguous language, creating joint interpretative statements or standard interpretation guidelines, instituting "stare decisis", and taking a systemic approach through institutional solutions like appeal mechanisms or permanent adjudicatory bodies (GAPER, 2024).

Using AI in decision-making processes like ISDS will force judges and other arbiters to strictly follow past decisions. This will stop judges from abusing their power. Judges and other arbiters will also have to deal with huge amounts of data, do complicated calculations, and find statistical representations of different fact patterns and legal actors. It stands to reason that the algorithms could lead to more equitable decisions. Using thorough data retrieval, AI systems can even push applicable legal requirements in cases where human judges or arbitrators are assisting. As a result, the arbitrator can have a better grasp of the issues at hand and be better able to avoid biased information and data (Touzet & Vienot de Vaublanc, 2018). It is critical now to have defined applications

of AI in the ISDS system, as the use of AI for ancillary administrative tasks is possible at the foundational level (American Arbitration Association, 2024). Arbitrators must be able to communicate with one another, divide up cases and resources fairly, and guarantee that all data, records, and judgement pertaining to the ISDS process are kept anonymous. This will help to meet the major goal of having a defined system linked with AI to simplify the complexity of the ISDS process while handling environmental matters efficiently and effectively in investor-state relationships (American Arbitration Association, 2024).

Moreover, AI integration in environmental monitoring and regulation is a significant advancement. Big data from various sources, including satellite imagery, IoT sensors, weather stations, and public records, is analyzed using advanced techniques like data fusion and spatial-temporal analysis. Machine learning algorithms are used to process and interpret the data, identifying anomalies and generating detailed reports to highlight potential violations (Krummenacher, 2023). It should be mentioned that the use of AI in ISDS is far lower than what is seen in domestic law. When it comes to domestic litigation, for example, the Lex Machina tool from LexisNexis can forecast outcomes by sifting through mountains of case data, including a judge's performance in comparable cases and how they stack up against their peers. But AI is also making its way into ISDS, albeit slowly (GAPER, 2024).

The Topic Tool is one of the research tools included in specialized databases like International Arbitration Reporter. It indexes hundreds of publications on ISDS judgement, awards, and orders (Lex Machina, 2024). Another programme, ISLG, enables users to examine a judgement that has undergone evaluation by other tribunals, extract the crucial portions, and contrast conclusions by switching between comparable decisions and awards. Additionally, users may access often referenced clauses, learn about the interpretation or application of particular legal instruments by tribunals, and quickly access pertinent paragraphs and footnotes (Investment Arbitration Reporter, 2020). Jus Mundi offers a multilingual search engine that is AI and ML-driven to make thorough legal research easier. No longer will you have to read each treaty or case in its full; the result page will show you just the most important paragraphs. Additionally, it comes with a GPT-powered application that may help you summarize lengthy papers, find the most important parts of documents, and assess the relevancy of materials (ISLG, 2024).

### **The Quantum of Compensation Calculation in the Investment Dispute**

Employing AI to determine compensation amounts and being aware of how to compute compensation when a state enacts a rule or policy pertaining to environmental measures becomes a hurdle when said legislation or policy clashes with investors (Luciana, 2022). It doesn't help because the investor may challenge the states using the IITs they signed, which further complicates the matter. Consequently, the amount of money the host state may get as compensation due to the environmental measures implemented for sustainable growth can be calculated using AI technologies (Lex Machina, 2024). At present, the ISDS process's monetary compensation is excessive in comparison to the developing nation's ability to pay it, investor compensation can even exceed the education component of the country's GDP. Because of this, emerging nations will have a harder time putting environmental conservation ahead of economic expansion (Kryvoi, 2023).

Although, the AI-related court battles and discussions highlight the potential complexities and dangers of technological partnerships (Li, 2024). Not only have chatbots become issue magnets, but they have also become

equal partners in negotiations. Companies like Walmart are utilizing AI to negotiate better terms in their procurement processes (Susskind, 2023). Chatbots can assist job-seekers with negotiations, according to the *California Management Review*, and they may even be superior (Hoek, DeWitt, Lacity, & Johnson, 2022). In February 2023, a software business named DoNotPay reportedly declared that it had trained the “world’s first robot lawyer” to argue for traffic court defendants using Bluetooth earpieces, as reported by *New Scientist*. Several state bar officials threatened to sue the company, prompting corporate leaders to abandon its AI bargaining technique (Schroth, 2024).

There is a greater possibility of environmental penalties occurring as a consequence of AI technology’s capacity to provide or forecast possible violations of environmental legislation. More regulation and oversight of regulated enterprises may be in the works, especially if artificial intelligence offers a cheap way to find any violations of environmental laws (Allyn, 2023). The judgments that AI makes, nevertheless, can be questioned. For instance, artificial intelligence might incorrectly interpret satellite data or drone footage, leading to the false prediction of an environmental law violation when none actually occurs. The same holds true for businesses: artificial intelligence (AI) isn’t perfect, and mistakes might lead to false accusations of a violation, even though the technology is cheap compared to environmental fines (Mishra, 2024).

Nevertheless, it is evident that the integration of AI into the ISDS process for environmental cases will keep pushing the limits of legal technology. This will serve as a model for future environmental law suits and demonstrate the usefulness of AI in intricate legal issues like those pertaining to environmental concerns and activities. Therefore, this will help to mitigate and measure the compensation that investor entitled at the moment state taking environmental measures to protect environment, since the current system is too expensive and closetful to many states especially developing countries (Mishra, 2024). The Working Group III, has identified rising length and costs of arbitral proceedings due to case complexity, fragmented investor protection provisions, and interlocutory proceedings (Karkason, 2023). Both sides incur higher costs, and concerns about the independence and impartiality of arbitrators, a lack of diversity in appointments, and the use of appointing authorities or state rosters are also under review. Critics also highlight the lack of transparency and third-party participation in proceedings, raising potential conflicts of interest (Karkason, 2023).

### **Potential Drawbacks of Utilizing AI to Promote Sustainable Development**

Artificial intelligence offers a lot of promise for investor-state arbitration, but there are certain restrictions on its use (Hodgson, Kryvoi, & Hrcka, 2021). Machines acquire knowledge via trial and error, disregarding factors like equity and morality (Touzet, 2018). AI may lack human “common sense”. Because of this, it’s possible for it to produce inaccurate or outdated data, or for its findings to adhere to the law yet contradict its intent (Billiet & Nordlund, 2018). Furthermore, AI outputs might lose credibility without human connection; it’s harder to establish enduring relationships grounded in empathy and situational awareness (Waqar, 2022). The legal profession’s use of AI has been compared to a new associate: someone who may be incredibly helpful but who also needs time, oversight, confirmation, and a healthy dose of skepticism (Waqar, 2022). Fair and equal treatment is one of several open-ended concepts that are used to inform ISDS decisions (Kryvoi, 2023). Every ISDS case is different because of the specific facts, geopolitical circumstances, and regulations that are relevant

to it, therefore, tribunals can and do make contradictory rulings since ISDS lacks an appeals court (Pietropaoli, 2023).

On the other hand, falsified data may be checked using AI. Due to the ease of editing facts in an electronic version, the use of artificial intelligence and digital information to arrive at a court conclusion might occasionally influence people's thoughts (Sarmiento & Niki òna, 2022). When compared to digital information and the more traditional methods of storing information in hard copy, the former makes it easier to edit and manipulate a clear memory, and the latter allows for the introduction of large amounts of false data because AI can mistakenly interpret this data as real. Indeed, this is one of the potential drawbacks of utilizing AI to promote sustainable development while also addressing environmental issues within the ISDS process (Kryvoi, 2023). Therefore, AI has the potential to be biased, showing an unfair preference for or bias against some groups. Algorithms are more prone than humans to perpetuate biases in training data due to their lack of moral principles and fairness perception. As an illustration of how data can undermine social justice and equality, consider a scenario where a state consistently faces setbacks in investor-state disputes. This could be due to factors like a lack of resources for quality legal representation, but the algorithm could interpret this as the "norm" and project that this state will continue to face setbacks going forward (Li, 2024).

It has been observed in September 2023, prominent fiction writers sued OpenAI for using their copyrighted books and articles to train a chatbot without their permission. The Authors Guild joined other lawsuits against OpenAI and Meta in filing this one (Li, 2024). In the said year, the *New York Times* sued OpenAI and Microsoft for copyright infringement, alleging millions of *Times* articles were used to train ChatGPT and other AI platforms (Kryvoi, 2023). The *Times* tried to reach a negotiated resolution with the companies in April but failed to reach a resolution. News business expert Richard Tofel expects many publishers to settle these lawsuits out of court with a Supreme Court decision on the use of copyrighted material in AI. OpenAI spokesperson Lindsey Held said negotiations were ongoing and the company was "surprised and disappointed" by the lawsuit.<sup>8</sup>

The most significant concern with artificial intelligence (AI) in mediation at the moment is the potential for systemic mistakes (Grynbaum & Mac, 2023). Stories of chatbots acting strangely have made headlines for both comedic and scary reasons.<sup>9</sup> For example, ChatGPT gave a *New York Times* writer unsettling love vows, made Thanksgiving meals that nobody could eat, and gave unusual "hallucinations" in answer to basic inquiries (Shonk, 2024). Chatbots are still in their early stages, so there is a chance that they might provide damaging or incorrect mediation advice. Attorneys have been known to use chat-based technologies to add "hallucinations" like made-up case citations to their works, according to Christopher K. Poole, CEO of JAMS, an alternative dispute resolution firm. Without human oversight, AI mediation might violate ethical and legal norms (Roose, 2023).

### **Recommendations and Conclusion**

In a nutshell, anticipating environmental hazards, such as oil spills or natural calamities, IA can assist ISDS process in proactively preparing for anticipated issues and then responding with greater speed and efficacy (Roose, 2023). For the purpose of informing policy choices, it is common practice to model various scenarios and forecast

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<sup>8</sup> The New York Times Company (Plaintiff) vs. Microsoft Corporation, and other Case 1:23-cv-11195 Document 1 Filed 12/27/23.

<sup>9</sup> The New York Times Company (Plaintiff) vs. Microsoft Corporation, and other Case 1:23-cv-11195.



their results in order to assess the effects of proposed laws and policies. The using of AI, can pinpoint where ISDS process can make improvements (Shonk, 2024). It is easy to come to a conclusion when the judge receives a case with similar material facts and established rules, much like the doctrine of precedent (Farrokhi-Asl, Makui, Ghousi, & Rabbani, 2020). AI application in handling environmental concerns plays a crucial role as the major example in monitoring, controlling, and analyzing environmental data in order to identify a problem (Mansoor, Khan, Farooq, Kaur, Manhas, Raina, & Khan, 2022). This shows that by allowing AI technology and the use of it, ISDS system can implement its effectiveness in decision-making and find solutions in different areas such as climate change, water, and the management of natural resources and biodiversity (Thomson Reuters, 2016).

Analyzing data from drone footage, satellite photography, and social media postings to ensure adherence to environmental regulations (PWC, 2024), AI may also determine resource optimization by identifying the areas where manual inspection would provide the greatest benefit. AI's capacity to provide real-time monitoring and enforcement is a significant benefit in ensuring compliance with environmental regulations and implementation through ISDS process (Collins, 2024). Artificial intelligence (AI) systems have the capability to monitor and regulate the levels of pollutants in the air and water, as well as identify instances of unauthorized disposal of trash (Lynch, 2024). AI's ability to offer real-time data enables enforcement agencies to swiftly identify areas necessitating involvement, resulting in enforcement activities that are more effective and efficient (Popescu et al., 2024). Undoubtedly, this presents difficulties for regulatory agencies like ISDS forum in terms of prioritizing performance goals, distributing resources in the field, and maintaining a positive public image (Yang, 2021).

## References

- Allyn, B. (2023). A robot was scheduled to argue in court, then came the jail threats. Retrieved August 25, 2024 from <https://www.npr.org/2023/01/25/1151435033/a-robot-was-scheduled-to-argue-in-court-then-came-the-jail-threats>
- American Arbitration Association. (2024). How arbitrators are harnessing artificial intelligence. Retrieved July 12, 2024 from <https://www.adr.org/blog/how-arbitrators-are-harnessing-artificial-intelligence>
- Arcury, T. A., & Christianson, E. H. (1990). Environmental worldview in response to environmental problems: Kentucky 1984 and 1988 compared. *Environment Behaviour*, 22, 387-407.
- Bedigan. (2024). A westlaw precision with cocounsel will transform legal research. Retrieved July 12, 2024 from <https://legal.thomsonreuters.com/en/c/westlaw/westlaw-precision-generative-ai?>
- Biden, J. (2021). Executive order on advancing racial equity and support for underserved communities through the federal government. Retrieved August 13, 2024 from <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government/>
- Billiet, P., & Nordlund, F. (2018). A new beginning artificial intelligence and arbitration. *Korean Arbitration Review*, 26, 27-29.
- Center for International Environmental Law. (2015). People's climate empowerment series (QUNO).
- Collin, P. (2024). AI and the environment: Its application in improving environmental performance and use in environmental regulation. Retrieved August 20, 2024 from <https://www.ashfords.co.uk/insights/articles/ai-and-the-environment-its-application-in-improving-environmental-performance-and-use-in-environmental-regulation>
- Davis, A. E. (2020). The future of law firms (and lawyers) in the age of artificial intelligence. Retrieved July 12, 2024 from [https://www.americanbar.org/groups/professional\\_responsibility/publications/professional\\_lawyer/27/1/the-future-law-firms-and-lawyers-the-age-artificial-intelligence/](https://www.americanbar.org/groups/professional_responsibility/publications/professional_lawyer/27/1/the-future-law-firms-and-lawyers-the-age-artificial-intelligence/)
- Environmental Protection Agency. (2024). Environmental justice. Retrieved August 15, 2024 from <https://www.epa.gov/environmentaljustice>
- Farrokhi-Asl, H., Makui, A., Ghousi, R., & Rabbani, M. (2020). Developing a hazardous waste management system with consideration of health, safety, and environment. *Comput. Electr. Eng.*, 82, 106553. doi:10.1016/j.compeleceng.2020.106553
- Fiveable Inc. (2024). ap spanish language review: Key term—Environmental challenges. Retrieved August 15, 2024 from <https://library.fiveable.me/key-terms/ap-spanish-lang/environmental-challenges>

- Fransson, N., & Garling, T. (1999). Environmental concern: Conceptual definitions, measurement methods, and research findings. *Journal of Environmental Psychology*, 19(4), 370-371.
- GAPER. (2024). The role of AI in ensuring compliance with environmental laws. Retrieved July 12, 2024 from <https://gaper.io/ai-ensuring-compliance-environmental-laws/>
- Ghosh, M., & Thirugnanam, A. (2021). Introduction to artificial intelligence. Retrieved August 13, 2024 from <https://www.researchgate.net/publication/351758474>
- Grynbaum, M. M., & Mac, R. (2023). The times sues OpenAI and Microsoft over A.I. use of copyrighted work. Retrieved from <https://www.nytimes.com/2023/12/27/business/media/new-york-times-open-ai-microsoft-lawsuit.html>
- Hodgson, M., Kryvoi, Y., & Hrcka, D. (2021). Empirical study: Costs, damages and duration in investor-state arbitration. British Institute of International and Comparative Law. Retrieved from [https://www.biicl.org/documents/136\\_isds-costs-damages-duration\\_june\\_2021.pdf](https://www.biicl.org/documents/136_isds-costs-damages-duration_june_2021.pdf)
- Hoek, R. V., DeWitt, M., Lacity, M., & Johnson, T. (2022). How Walmart automated supplier negotiations. *Havard Business Review*. Retrieved July 12, 2024 from <https://hbr.org/2022/11/how-walmart-automated-supplier-negotiations>
- Human Research Protection Office-HRPO. (2024). *The European Union (EU) General Data Protection Regulation (GDPR)*. Pittsburgh: University of Pittsburgh.
- Investment Arbitration Reporter. (2020). Legal research: The topic tool and ISDS guidebook. Retrieved July 12, 2024 from <https://www.iareporter.com/new-features/>
- Isaya Laltaika, E. (2024). Presentation on AI and tort law: Law and obligation. Presented at *UNU Macau AI Conference*. United Nations University, Tokyo, Japan.
- ISLG. (2024). Research reinvented. Retrieved July 12, 2024 from <https://new.investorstatelawguide.com/product/>
- Karkason, D. (2023). Challenges and criticisms of investor state dispute mechanisms. Retrieved August 25, 2024 from <https://www.transnationalmatters.com/understanding-problems-with-investor-state-dispute-mechanisms/>
- Krummenacher, P. (2023). International trade and artificial intelligence: Is trade policy ready for Chat GPT? Retrieved July 12, 2024 from <https://www.iisd.org/articles/policy-analysis/international-trade-artificial-intelligence-chatgpt>
- Kryvoi, Y. (2023). Artificial intelligence and the practice of investor-state arbitration. Retrieved July 12, 2024 from <https://www.biicl.org/blog/71/artificial-intelligence-and-the-practice-of-investor-state-arbitration?cookieset=1&ts=1724842562>
- Lex Machina. (2024). How Lex Machina legal analytics works. Retrieved July 12, 2024 from <https://lexmachina.com/how-it-works/>
- Li, H. (2024). *A conversation on ISDS and environmental concerns, the harnessing AI for sustainable development*. Beijing: Beijing Institute of Technology.
- Luciana, C. (2022). About Jus Mundi search engine. Retrieved July 12, 2024 from <https://help.jusmundi.com/en/articles/4396999-about-jus-mundi-search-engine>
- Lynch, M. (2024). Maximizing efficiency: The impact of AI on quality inspections in manufacturing. Retrieved August 22, 2024 from <https://praxie.com/ai-quality-inspections-in-manufacturing/>
- Mann, H., & von Moltke, K. (2020). Investor-state dispute settlement and the right to regulate: Ensuring environmental protection in international investment law. International Institute for Sustainable Development. Retrieved from <https://www.iisd.org>
- Mansoor, H., Khan, N. F., Farooq, I., Kaur, N., Manhas, S., Raina, S., & Khan, I. F. (2022). Phytoremediation at molecular level. In *Phytoremediation* (pp. 65-90). New York: Elsevier.
- McNulty, T. P. (2024). IP considerations for AI-generated content: Copyrights and beyond. In *L&A's intellectual property year-in-review video series* (Part 4). Boston: Lando & Anastasi, LLP.
- Mishra, P. K. (2024). AI and the legal landscape: Embracing innovation, addressing challenges. Retrieved August 20, 2024 from <https://www.livelaw.in/lawschool/articles/law-and-ai-ai-powered-tools-general-data-protection-regulation>
- Naseer. (2023). United Nations department of global communications approves 17 civil society organizations for association, meetings coverage and press releases. Retrieved August 15, 2023 from <https://press.un.org/en/2023/pi2308.doc.htm>
- Pathak, H. (2019). Consenting to counterclaims under the ICSID convention. *Pepperdine Dispute Resolution Law Journal*, 19(1), 101-102.
- Pawlik, K. (1991). The psychology of global environmental change: Some basic data and an agenda for cooperative international research. *International Journal of Psychology*, 26(5), 547-563.
- Pietropaoli, I. (2023). Use of artificial intelligence in legal practice. Retrieved August 25, 2024 from <https://www.biicl.org/publications/use-of-artificial-intelligence-in-legal-practice>

- Popescu, S. M., Mansoor, S., Wani, O. A., Kumar, S. S., Sharma, V., Sharma, A., ... Chung, Y. S. (2024). Artificial intelligence and IoT driven technologies for environmental pollution monitoring and management. *Front. Environ. Sci.*, 12, 1336088. Retrieved August 22, 2024 from <https://doi.org/10.3389/fenvs.2024.1336088>
- PWC. (2024). Turning the tide on economic inactivity: Retaining talent and skills in the workforce. Retrieved August 19, 2024 from <https://www.pwc.co.uk/services/sustainability-climate-change/insights/how-ai-future-can-enable-sustainable-future.html>
- QUNO (Quaker United Nations Office). (2020). People's climate empowerment series. Retrieved August 15, 2024 from <https://quno.org/resource/peoples-climate-empowerment-series>
- Roose, K. (2023). A conversation with Bing's Chatbot left me deeply unsettled. Retrieved August 25, 2024 from <https://www.nytimes.com/2023/02/16/technology/bing-chatbot-microsoft-chatgpt.html>
- Sahota, N. (2024). Hiring best-fit lawyers: Why AI has changed the game on firm recruiting. Retrieved August 15, 2024 from <https://www.jdsupra.com/legalnews/hiring-best-fit-lawyers-why-ai-has-4335131/>
- Sarmiento, F., & Nikić, S. (2022). Fair and equitable treatment: Why it matters and what can be done. *IISD Best Practices Series Policy Brief*. Retrieved from <https://www.iisd.org/system/files/2022-11/fair-equitable-treatment-en.pdf>
- Sattorova, M., & Orazgaliyev, S. (2023). Artificial intelligence in investor-state dispute settlement: Towards sustainable development through data-driven adjudication. *Journal of International Economic Law*, 26(2), 345-367. Retrieved from <https://doi.org/10.1093/jiel/jgad012>
- Schroth, H. (2024). Hey ChatGPT, can you help me negotiate my salary? *California Management Review*, 66(4). Retrieved August 25, 2024 from <https://cmr.berkeley.edu/2023/02/hey-chatgpt-can-you-help-me-negotiate-my-salary/>
- Shonk, K. (2024). AI mediation: Using AI to help mediate disputes. Retrieved August 25, 2024 from <https://www.pon.harvard.edu/daily/mediation/ai-mediation-using-ai-to-help-mediate-disputes/>
- Smith, J. A., & Chen, L. (2023). Artificial intelligence in environmental dispute resolution: Enhancing efficiency and risk assessment in ISDS. *Journal of Sustainable Investment and Trade*, 15(4), 112-135.
- SourceBreaker. (2023). Traditional recruitment vs. modern recruitment. Retrieved August 15, 2024 from <https://www.sourcebreaker.com/traditional-vs-modern-recruitment/>
- Susskind, L. (2023). Negotiation training: What's special about technology negotiations? Retrieved July 12, 2024 from <https://www.pon.harvard.edu/daily/negotiation-training-daily/negotiation-training-whats-special-about-technology-negotiations/>
- Thomson Reuters. (2016). Doctrine of precedent: Status of the judge or status of the court? Retrieved August 22, 2024 from <http://publicsectorblog.practicallaw.com/doctrine-of-precedent-status-of-the-judge-or-status-of-the-court/>
- Tienhaara, K. (2018). Regulatory chill in a warming world: The threat to climate policy posed by investor-state dispute settlement. *Transnational Environmental Law*, 7(2), 229-250. Retrieved from <https://doi.org/10.1017/S2047102517000309>
- Touzet, J. (2018). The investor-state dispute settlement system: The road to overcoming criticism. Retrieved August 25, 2024 from <https://arbitrationblog.kluwerarbitration.com/2018/08/06/the-investor-state-dispute-settlement-system-the-road-to-overcoming-criticism>
- Touzet, J., & Vienot de Vaublanc, M. (2018). The investor-state dispute settlement system: The road to overcoming criticism. Retrieved July 12, 2024 from <https://arbitrationblog.kluwerarbitration.com/2018/08/06/the-investor-state-dispute-settlement-system-the-road-to-overcoming-criticism/>
- United Nations Department of Economic and Social Affairs. (2007). International decades for action: Water for life 2005-2015, human development report 2006. UNDP, 2006, and coping with water scarcity. Challenge of the twenty-first century. UN-Water, FAO. Retrieved August 20, 2024 from <https://www.un.org/waterforlifedecade/scarcity.shtml>
- Vattenfall v. Germany (II), International Institute for Sustainable Development. (2012). The nuclear phase-out in Germany. Retrieved from [http://www.iisd.org/sites/default/files/pdf/2012/german\\_nuclear\\_phase\\_out.pdf](http://www.iisd.org/sites/default/files/pdf/2012/german_nuclear_phase_out.pdf)
- Wang, S., Wang, H., & Sun, Q. (2020). The impact of foreign direct investment on environmental pollution in China: Corruption matters. *International Journal for Environmental Research and Public Health*, 17(18), 6477. doi:10.3390/ijerph17186477
- Waqar, M. (2022). The use of AI in arbitral proceedings. *Ohio State Journal on Dispute Resolution*, 37(3), 354.
- Willy, D. K., Muyanga, M., Mbuvi, J., & Jayne, T. (2019). The effect of land use change on soil fertility parameters in densely populated areas of Kenya. *Geoderma*, 343, 254-262. Retrieved August 19, 2024 from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6472540/>
- World Trade Organization. (2024a). Who we are. Retrieved August 28, 2024 from [https://www.wto.org/english/thewto\\_e/whatis\\_e/who\\_we\\_are\\_e.htm/](https://www.wto.org/english/thewto_e/whatis_e/who_we_are_e.htm/)
- World Trade Organization. (2024b). Dispute settlement. Retrieved July 12, 2024 from [https://www.wto.org/english/tratop\\_e/dispu\\_e/dispu\\_e.htm](https://www.wto.org/english/tratop_e/dispu_e/dispu_e.htm)

- Yang, C. T. (2021). Current advances and future challenges of AIoT applications in particulate matters (PM) monitoring and control. *Journal of Hazardous Materials*, 419, 126442. doi:10.1016/j.jhazmat.2021.126442
- Zhou, J., & Jin, S. (2023). Corporate environmental protection behaviour and sustainable development: The moderating role of green investors and green executive cognition. *International Journal for Environmental Research and Public Health*, 20(5), 4179. Retrieved August 19, 2024 from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10002362/>