

**Alternative Dispute Resolution in the Context of Emerging
Challenges of Climate Change, Cyber Security, and
Globalization**

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Alternative Dispute Resolution in the Context of Emerging Challenges of Climate Change, Cyber Security, and Globalization

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Abstract

Alternative Dispute Resolution (ADR) mechanisms possess key attributes including informality, privacy, confidentiality, flexibility and the ability to promote expeditious and cost-effective management of disputes which makes them a viable tool of enhancing access to justice. Due to their key attributes and advantages, ADR processes are suitable in multiple contexts. This paper critically examines ADR in the context of emerging challenges of climate change, cyber security, and globalization. It argues that ADR is a viable mechanism in managing risks and disputes related to climate change, cyber security, and globalization. The paper conceptualizes the emerging challenges of climate change, cyber security, and globalization. It also critically discusses the suitability of ADR in these areas. In addition, the paper highlights some of the concerns with utilizing ADR in climate change, cyber security, and globalization contexts and suggests measures towards embracing ADR processes in light of these emerging challenges.

1.0 Introduction

The concept of Alternative Dispute Resolution (ADR) encompasses a set of processes that are applied to manage disputes without resort to adversarial litigation¹. ADR is also a term that refers to a wide range of mechanisms that are applied in managing disputes that may be linked to but function outside formal court litigation processes². In addition, ADR has been defined as an all-encompassing term which refers to multiple non-judicial

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¹ Muigua. K., 'Alternative Dispute Resolution and Access to Justice in Kenya.' Glenwood Publishers Limited, 2015

² Uwazie. E., 'Alternative Dispute Resolution in Africa: Preventing Conflict and Enhancing Stability.' *Africa Security Brief*, No. 16 of 2011

methods of handling conflicts and disputes between parties³. According to the United Nations, ADR (sometimes also referred to as “Appropriate Dispute Resolution”) is a general term, used to define a set of approaches and techniques aimed at resolving disputes in a nonconfrontational way⁴. It further notes that ADR covers a broad spectrum of approaches, from party-to-party engagement in negotiations as the most direct way to reach a mutually accepted resolution, to arbitration and adjudication at the other end, where an external party imposes a solution⁵. In addition, the United Nations points out that somewhere along the axis of ADR approaches, between these two extremes, lies “mediation,” a process by which a third party aids the disputants to reach a mutually agreed solution⁶. ADR mechanisms include negotiation, mediation, arbitration, conciliation, adjudication, expert determination, early neutral evaluation, and Traditional Dispute Resolution Mechanisms (TDRMs) among others⁷.

ADR has been embraced at global and national levels. At the global level, ADR mechanisms are recognized under the *Charter of the United Nations*⁸. The Charter provides that parties to a dispute shall first of all seek a solution by *negotiation, enquiry, mediation, conciliation, arbitration*, judicial settlement, resort to regional agencies or arrangements, or other peaceful means of their own choice⁹(Emphasis added). At a national level, the *Constitution of Kenya*¹⁰ embraces ADR mechanisms. It mandates courts and tribunals to promote ADR mechanisms including reconciliation, mediation, arbitration and TDRMs¹¹.

³ Block. M. J., ‘The Benefits of Alternate Dispute Resolution for International Commercial and Intellectual Property Disputes.’ *Rutgers Law Record.*, Volume 44, 2016-2017

⁴ United Nations., ‘Alternative Dispute Resolution Approaches and their Application in Water Management: A Focus on Negotiation, Mediation and Consensus Building’ Available at https://www.un.org/waterforlifedecade/water_cooperation_2013/pdf/adr_background_paper.pdf (Accessed on 24/02/2024)

⁵ Ibid

⁶ Ibid

⁷ Muigua. K., ‘Alternative Dispute Resolution and Access to Justice in Kenya.’ Op Cit

⁸ United Nations, Charter of the United Nations, 24 October 1945, 1 UNTS XVI

⁹ Ibid, article 33 (1)

¹⁰ Constitution of Kenya., 2010., Government Printer, Nairobi

¹¹ Ibid, article 159 (2) (c)

ADR processes have been hailed as being ideal in enhancing access to justice which is a fundamental human right¹². Access to justice is a key human right that has been recognized under the Constitution of Kenya¹³. The Constitution requires the state to ensure access to justice for all persons and that, if any fee is required, it shall be reasonable and shall not impede access to justice¹⁴. However, it has been noted that the right of access to justice especially in Kenya and Africa at large has for many years been hampered by several unfavourable factors such high court filing fees, bureaucracy, complex legal procedures, illiteracy, distance from formal courts, backlog of cases in courts and lack of legal knowhow¹⁵. ADR techniques have the potential to address these challenges and promote the right of access to justice in Africa¹⁶. Most ADR mechanisms possess key attributes including informality, privacy, confidentiality, flexibility and the ability to promote expeditious and cost-effective management of disputes which makes them a viable tool of enhancing access to justice¹⁷.

Due to their key attributes and advantages, ADR processes are suitable in multiple contexts. This paper critically examines ADR in the context of emerging challenges of climate change, cyber security, and globalization. It argues that ADR is a viable mechanism in managing risks and disputes related to climate change, cyber security, and globalization. The paper conceptualizes the emerging challenges of climate change, cyber security, and globalization. It also critically discusses the suitability of ADR in these areas. In addition, the paper highlights some of the concerns with utilizing ADR in climate

¹² Muigua. K & Kariuki. F., 'ADR, Access to Justice and Development in Kenya.' Available at <http://kmco.co.ke/wp-content/uploads/2018/08/ADR-access-to-justice-and-development-inKenyaRevised-version-of-20.10.14.pdf> (Accessed on 24/04/2024)

¹³ Constitution of Kenya., 2010., article 48

¹⁴ Ibid

¹⁵ Ojwang. J.B , "The Role of the Judiciary in Promoting Environmental Compliance and Sustainable Development," 1 *Kenya Law Review Journal* 19 (2007), pp. 19-29: 29

¹⁶ Muigua. K., 'Alternative Dispute Resolution and Access to Justice in Kenya.' Op Cit

¹⁷ Ibid

change, cyber security, and globalization contexts and suggests measures towards embracing ADR processes in light of these emerging challenges.

2.0 Conceptualizing Climate Change, Cyber Security, and Globalization

2.1 Climate Change

Climate change is a phenomenon that refers to the long-term shift in global or regional climate patterns and is often associated with the rise in global temperatures from the mid-20th century to present¹⁸. It has also been described as the global phenomenon of climate transformation characterized by the changes in the usual climate of the planet (regarding temperature, precipitation, and wind) that are especially caused by human activities¹⁹. The *United Nations Framework Convention on Climate Change* (UNFCCC) defines climate change as a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods²⁰. Climate change therefore entails long-term shifts in temperatures and weather patterns. Such shifts can be natural, due to factors such as changes in the sun's activity or large volcanic eruptions²¹. However, human activities have been the main drivers of climate change due to the burning of fossil fuels like coal, oil and gas²². Human activities have increased the concentration of atmospheric carbon dioxide among other greenhouse gases resulting to the greenhouse effect which contributes to global warming and climate change²³.

¹⁸ National Geographic., 'Climate Change.' Available at <https://education.nationalgeographic.org/resource/climate-change/> (Accessed on 24/04/2024)

¹⁹ Climate Change., 'Meaning, Definition, Causes, Examples and Consequences.' Available at <https://youmatter.world/en/definition/climate-change-meaning-definition-causes-and-consequences/> (Accessed on 24/04/2024)

²⁰ United Nations Framework Convention on Climate Change., United Nations, 1992., Available at <https://unfccc.int/resource/docs/convkp/conveng.pdf> (Accessed on 24/04/2024)

²¹ United Nations., 'What is Climate Change?' Available at <https://www.un.org/en/climatechange/what-is-climate-change> (Accessed on 24/04/2024)

²² Ibid

²³ Ibid

Climate change is an undesirable phenomenon that affects realization of the Sustainable Development agenda across the world by affecting the sustainability of the planet's ecosystems, the stability of the global economy and the future of humankind²⁴. Its impacts including intense droughts, water scarcity, severe fires, rising sea levels, flooding, melting polar ice, catastrophic storms and declining biodiversity are being witnessed all over the world²⁵. Climate change has been described as the main global challenge that is affecting both developed and developing countries in their quest towards achieving Sustainable Development²⁶. As a result, climate change has risen to the top of the policy agenda, at local, national, and global levels²⁷. The United Nations *2030 Agenda for Sustainable Development*²⁸ acknowledges that climate change is one of the greatest challenge of our time and its adverse impacts undermine the ability of all countries to achieve Sustainable Development. Under the Agenda, Sustainable Development Goal 13 urges states to take urgent action to combat climate change and its impacts²⁹. Governments have therefore been urged to strengthen climate action in their countries in order to respond to the threat of climate change and ensure that economies are climate resilient³⁰. However, it has been noted that climate action taken to date by the international community has been insufficient to prevent or reverse the negative trends

²⁴ Climate Change., 'Meaning, Definition, Causes, Examples and Consequences.' Available at <https://youmatter.world/en/definition/climate-change-meaning-definition-causes-and-consequences/> (Accessed on 24/04/2024)

²⁵ United Nations., 'What is Climate Change?' Available at <https://www.un.org/en/climatechange/whatis-climate-change> (Accessed on 24/04/2024)

²⁶ Muigua. K., 'Achieving Sustainable Development, Peace and Environmental Security.' Glenwood Publishers Limited, 2021

²⁷ United Nations Department of Economic and Social Affairs., 'Forum on Climate Change and Science and Technology Innovation.' Available at <https://www.un.org/en/desa/forum-climate-changeandscienceand-technology-innovation> (Accessed on 24/04/2024)

²⁸ United Nations General Assembly., 'Transforming Our World: the 2030 Agenda for Sustainable Development.' 21 October 2015, A/RES/70/1., Available at <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (Accessed on 24/04/2024)

²⁹ Ibid

³⁰ Muigua. K., 'Achieving Sustainable Development, Peace and Environmental Security.' Op Cit

of climate change³¹. Urgent and transformative action is therefore required to combat climate change and promote Sustainable Development³².

2.2 Cyber Security

Cyber security has been defined as the activity or process, ability or capability, or state whereby information and communications systems and the information contained therein are protected from and/or defended against damage, unauthorized use or modification, or exploitation³³. It is a term used to cover the measures government institutions take to protect the public and the institutions themselves from threats in the 'cyber'- domain, also known as 'cyberspace'³⁴. Cybersecurity has also been defined as the art of protecting networks, devices, and data from unauthorized access or criminal use and the practice of ensuring confidentiality, integrity, and availability of information³⁵. It entails any technology, measure or practice for preventing cyberattacks or mitigating their impact³⁶. Cybersecurity aims to protect individuals' and organizations' systems, applications, computing devices, sensitive data and financial assets against computer viruses, sophisticated and costly ransomware attacks, among other cyberattacks³⁷. Cyber security is therefore a concept that seeks to protect the cyberspace from unwarranted

³¹ International Committee of the Red Cross., 'The ICRC's Call To Cop28: Urgent and Ambitious Action is Needed to Mitigate Climate Change and Strengthen Climate Action in Conflict Settings' Available at https://www.icrc.org/sites/default/files/topic/file_plus_list/the_icrcs_call_to_strengthen_climate_action_in_conflict_settings_ahead_of_cop28_1.pdf (Accessed on 24/04/2024)

³² United Nations., 'Goal 13: Take Urgent Action to Combat Climate Change and its Impacts.' Available at <https://www.un.org/sustainabledevelopment/climate-change/> (Accessed on 24/01/2024)

³³ Bay. M., 'What is Cybersecurity? In Search of an Encompassing Definition for the Post-Snowden Era' Available at https://www.researchgate.net/profile/Morten-Bay/publication/308609163_WHAT_IS_CYBERSECURITY_In_search_of_an_encompassing_definition_for_the_post-Snowden_era/links/57e8575608ae9e5e4558c7d9/WHAT-IS-CYBERSECURITY-In-search-of-an-encompassing-definition-for-the-post-Snowden-era.pdf (Accessed on 24/04/2024)

³⁴ Ibid

³⁵ Cyber Security and Infrastructure Security Agency., 'What is Cybersecurity?' Available at <https://www.cisa.gov/news-events/news/what-cybersecurity> (Accessed on 24/04/2024)

³⁶ IBM., 'What is Cybersecurity?' Available at <https://www.ibm.com/topics/cybersecurity> (Accessed on 24/04/2024)

³⁷ Ibid

attacks. The cyberspace is a time-dependent set of interconnected information systems and the humans that interact with these systems³⁸.

Cyber security plays a fundamental role in the global economy. It has been noted that as technology continues to advance and businesses become increasingly reliant on digital platforms, the risk of cyber threats becomes more prevalent³⁹. Cyber-attacks can have devastating consequences for both individuals and organizations, leading to financial losses, reputational damage, and even national security breaches⁴⁰. As a result, it is imperative that governments, businesses, and individuals prioritize cyber security measures to safeguard their interests⁴¹. Cybersecurity is important because it safeguards all types of data against theft and loss especially Sensitive data such as Protected Health Information (PHI), Personally Identifiable Information (PII), intellectual Property (IP), personal information, and government and business information systems⁴².

It has been noted that climate change can trigger more cyber-attacks⁴³. Climate change increases cyber threats, instability and disruptions that can be exploited by cybercriminals⁴⁴. For example, extreme weather events such as tropical cyclones and floods can damage physical infrastructure, including data centers, servers and critical Information Technology (IT) systems, leaving them vulnerable to cyber-attacks⁴⁵. In addition, it has been noted that as a result of climate change, more frequent extreme weather events, like hurricanes and tsunamis, will put critical digital systems in greater

³⁸ Bay. M., 'What is Cybersecurity? In Search of an Encompassing Definition for the Post-Snowden Era' Op Cit

³⁹ Kala, E., 'Critical Role of Cyber Security in Global Economy. *Open Journal of Safety Science and Technology*, (2023) 13, 231-248. doi: [10.4236/ojsst.2023.134012](https://doi.org/10.4236/ojsst.2023.134012) (Accessed 24/04/2024)

⁴⁰ Ibid

⁴¹ Ibid

⁴² Ibid

⁴³ Shea. S., 'Where Climate Change and Cyber-Attacks Intersect' Available at <https://www.techtarget.com/searchsecurity/feature/Where-climate-change-and-cyber-attacks-intersect> (Accessed on 24/04/2024)

⁴⁴ Ibid

⁴⁵ Ibid

physical danger, such as damaging underwater communication cables and off-site servers⁴⁶. The resulting disruption to internet connectivity puts systems at greater risk of attacks⁴⁷. Climate change and cyber security are therefore interconnected. It has correctly been observed that the effects of climate change not only impact the physical world but also the digital one⁴⁸. Therefore, linking the two threats and finding the connections may help governments and organizations create strategies and implement plans and recovery programmes that could help mitigate the disruptions caused by both threats⁴⁹.

2.3 Globalization

Globalization is a concept that describes the growing interdependence of the world's economies, cultures, and populations, brought about by factors such as cross-border trade in goods and services, technology, and flows of investment, people, and information⁵⁰. Globalization describes how trade and technology have made the world into a more connected and interdependent place⁵¹. Globalization also captures in its scope the economic and social changes that have come about as a result of this interconnectedness⁵². The International Monetary Fund (IMF) notes that globalization refers to the increasing integration of economies around the world, particularly through the movement of goods, services, and capital across borders⁵³. In addition, IMF points out that globalization also refers to the movement of people (labor) and knowledge (technology) across international borders⁵⁴. Further, it opines that there are also broader

⁴⁶ Coker. J., 'Climate Change is Increasing Cyber-Risks' Available at <https://www.preventionweb.net/news/climate-change-increasing-cyber-risks> (Accessed on 24/04/2024)

⁴⁷ Ibid

⁴⁸ Ibid

⁴⁹ Ibid

⁵⁰ Peterson Institute for International Economics., 'What Is Globalization?' Available at <https://www.piie.com/microsites/globalization/what-is-globalization> (Accessed on 24/04/2024)

⁵¹ National Geographic., 'Globalization' Available at <https://education.nationalgeographic.org/resource/globalization/> (Accessed on 24/04/2024)

⁵² Ibid

⁵³ International Monetary Fund., 'Globalization: A Brief Overview' Available at <https://www.imf.org/external/np/exr/ib/2008/053008.htm> (Accessed on 24/04/2024)

⁵⁴ Ibid

cultural, political, and environmental dimensions of globalization⁵⁵. According to IMF, a core element of globalization is the expansion of world trade through the elimination or reduction of trade barriers, such as import tariffs⁵⁶.

Globalization has brought benefits and opportunities for many people in many parts of the world⁵⁷. However, many others have been excluded from the positive impact of globalization⁵⁸. It has been noted that as a result of globalization inequality between and within countries has also increased and global environmental risks have increasingly become a matter of global concern⁵⁹. Globalization increases consumption, resource depletion, and carbon emissions therefore contributing to climate change⁶⁰. Further, it has been noted that increased transportation of goods as a result of globalization has contributed to increased greenhouse gas emissions, habitat destruction, and the spread of invasive species therefore contributing to environmental degradation⁶¹. Many aspects of globalization combine to increase the dangers of a variety of transnational threats from weapons proliferation, cyber-attacks, ethnic violence, environmental degradation, and the spread of infectious diseases⁶². It is therefore necessary to ensure that the benefits of globalization are expanded and spread more broadly and that its potentially negative effects are diminished⁶³.

⁵⁵ Ibid

⁵⁶ Ibid

⁵⁷United Nations., 'Globalization and Interdependence' Available at <https://www.un.org/esa/coordination/globalization.htm#:~:text=Globalization%20and%20interdependence%20has%20been,interdependence%20and%20the%20policy%20implications.> (Accessed on 24/04/2024)

⁵⁸ Ibid

⁵⁹ Ibid

⁶⁰Latif. N et al., 'Unraveling the Nexus: The Impact of Economic Globalization on the Environment in Asian Economies' *Research in Globalization.*, Volume 7, (2023)

⁶¹ Ibid

⁶² Davis. L., 'Globalization's Security Implications' Available at https://www.rand.org/pubs/issue_papers/IP245.html (Accessed on 24/04/2024)

⁶³ ⁶³United Nations., 'Globalization and Interdependence' Op Cit

3.0 ADR in the Context of Climate Change, Cyber Security, and Globalization

3.1 ADR and Climate Change

ADR is applicable in climate action by providing viable options for effective management of climate change disputes⁶⁴. It has been noted that climate change disputes are consistently rising throughout the world⁶⁵. Climate change related disputes include any dispute arising out of or in relation to the effect of climate change and climate change policy as envisaged under global climate agreements including the UNFCCC and the Paris Agreement, and also regional and national climate change laws and policies⁶⁶. It has been noted that the required rapid and far-reaching transition in energy, land and natural resources use, transport, urban and infrastructure and industrial systems arising out of the global response to climate change is giving rise to new investments and contracts, and accordingly contractual and other legal disputes related to climate change⁶⁷. Climate change disputes may arise out of or in relation to: contracts relating to the implementation of energy or other systems transition, mitigation or adaptation in line with the Paris Agreement commitments⁶⁸; contracts without any specific climate-related purpose or subject-matter but where a dispute involves or gives rise to a climate or related environmental issue⁶⁹; and submission or other specific agreements entered into to resolve existing climate change or related environmental disputes, potentially involving

⁶⁴ Muigua. K., 'Utilizing Alternative Dispute Resolution in Climate Change Disputes' Available at <https://kmco.co.ke/wp-content/uploads/2024/03/Utilizing-Alternative-Dispute-Resolution-in-Climate-Change-Disputes.pdf> (Accessed on 25/04/2024)

⁶⁵ Burianski. M., & Kuhnle. F. P., 'A New Wave of African Climate Change Disputes on the Horizon' Available at <https://www.whitecase.com/insight-our-thinking/africa-focus-winter-2023-climatechange#:~:text=Disputes%20could%20involve%20liability%20and,and%20enforced%2C%20and%20investment%20disputes.> (Accessed on 25/04/2024)

⁶⁶ International Chamber of Commerce., 'Resolving Climate Change Related Disputes through Arbitration and ADR' Available at <https://iccwbo.org/wp-content/uploads/sites/3/2019/11/icc-arbitration-adr-commission-report-on-resolving-climate-change-related-disputes-english-version.pdf> (Accessed on 25/04/2024)

⁶⁷ Ibid

⁶⁸ Ibid

⁶⁹ Ibid

impacted groups or populations⁷⁰. Climate change disputes fall into various categories including claims seeking to enforce human rights enshrined in international law and national constitutions⁷¹; challenges to domestic non-enforcement of climate-related laws and policies⁷²; litigants seeking to keep fossil fuels in the ground⁷³; advocates for greater climate disclosures and an end to greenwashing⁷⁴; claims addressing corporate liability and responsibility for climate harms⁷⁵; and claims addressing failures to adapt to the impacts of climate change⁷⁶. These disputes include commercial contract disputes and disputes arising pursuant to investor-state treaties, including but not limited to claims arising out of new climate change related regulatory measures implemented by a state⁷⁷.

Climate change disputes are growing in Africa⁷⁸. The continent's heavy reliance on fossil fuels for economic growth, set against the backdrop of strict environmental regulations and emissions-reduction targets, creates a perfect storm of factors that could increase climate change-related disputes in Africa⁷⁹. Africa is highly vulnerable to climate change with its impacts such as increasing temperatures and sea levels, changing precipitation patterns and more extreme weather events such as droughts and floods threatening human health and safety, food and water security and socio-economic development in the continent⁸⁰. In light of these challenges, African countries are strengthening domestic

⁷⁰ Ibid

⁷¹ United Nations Environment Programme., 'Climate Litigation More than Doubles in Five Years, now a Key Tool in Delivering Climate Justice' Available at <https://www.unep.org/news-and-stories/pressrelease/climate-litigation-more-doubles-five-years-now-key-tool-delivering> (Accessed on 25/04/2024)

⁷² Ibid

⁷³ Ibid

⁷⁴ Ibid

⁷⁵ Ibid

⁷⁶ Ibid

⁷⁷ International Chamber of Commerce., 'Resolving Climate Change Related Disputes through Arbitration and ADR' Op Cit

⁷⁸ Burianski. M., & Kuhnle. F. P., 'A New Wave of African Climate Change Disputes on the Horizon' Op Cit

⁷⁹ Ibid

⁸⁰ United Nations Climate Change., 'Climate Change is an Increasing Threat to Africa.' Available at <https://unfccc.int/news/climate-change-is-an-increasing-threat-to-africa> (Accessed on 25/04/2024)

climate action through measures such as increasing renewable energy generation, embracing environmentally sound technologies, decarbonizing key sectors including transport, industry, and infrastructure, and enhancing investments in carbon markets⁸¹. These measures may trigger climate change disputes in Africa. For example, if states fail to adopt and implement these measures effectively, individuals or interest groups may sue these states to force them to act⁸². Further, if adopted, these measures may contrast with states' attempts to grow their economies also contributing to disputes⁸³.

Climate change disputes are undesirable and can affect peace and security⁸⁴. These disputes can also hinder the achievement of climate goals at all levels⁸⁵. Effective management of climate change disputes is therefore crucial in strengthening the response towards climate change and delivering climate justice⁸⁶.

There is room for utilizing ADR for effective and efficient management of climate change disputes⁸⁷. For example, arbitration can be effectively utilized to settle disputes that potentially engage climate change and related environmental issues. Arbitration is frequently adopted in commercial contracts concerning energy, land use, urban and infrastructure and industry among other key sectors in the climate change debate⁸⁸. Further, with climate investments on the rise, arbitration offers a viable option for

⁸¹ Burianski. M., & Kuhnle. F. P., 'A New Wave of African Climate Change Disputes on the Horizon' Op Cit

⁸² Ibid

⁸³ Ibid

⁸⁴ United Nations Department of Political and Peacebuilding Affairs., 'The Implications of Climate Change for Mediation and Peace Processes' Available at <https://peacemaker.un.org/sites/peacemaker.un.org/files/DPPAPracticeNoteTheImplicationsofClimateChangeforMediationandPeaceProcesses.pdf> (Accessed on 25/04/2024)

⁸⁵ United Nations Environment Programme., 'Climate Litigation More than Doubles in Five Years, now a Key Tool in Delivering Climate Justice' Op Cit

⁸⁶ Ibid

⁸⁷ Muigua. K., 'Utilizing Alternative Dispute Resolution in Climate Change Disputes' Op Cit

⁸⁸ International Chamber of Commerce., 'Resolving Climate Change Related Disputes through Arbitration and ADR' Op Cit

managing disputes through Investor-State Dispute Settlement (ISDS)⁸⁹. Arbitration also allows parties to select arbitrators with expertise in climate change matters therefore ensuring effective management of disputes⁹⁰. Further, due to its transnational applicability, arbitration can ensure effective management of cross border climate change disputes since it applies across multiple jurisdictions and also guarantees enforcement of decisions⁹¹.

It has been noted that arbitration is already being utilized to determine climate change related disputes arising under the UNFCCC's Green Climate Fund and the Kyoto Protocol⁹². Arbitration offers the advantage of a neutral forum and benefitting from worldwide coverage by the Convention on the Recognition and Enforcement of Foreign Arbitral Awards (the "New York Convention") therefore enabling cross border recognition and enforcement of arbitral awards. Other key advantages that arbitration could offer in managing climate change disputes is accessibility of the tribunal, expertise and flexibility as to where an arbitration is hosted⁹³. Further, it has been noted that arbitral tribunals can adopt realistic time-frames, engage expert knowledge, in certain limited circumstances admit amicus evidence and adapt the process with flexibility depending on the nature and scope of disputes therefore providing an avenue for effective management of climate change disputes⁹⁴.

⁸⁹ Alarcon. M. J., 'Climate Change and ISDS – Reshaping Investment Arbitration to Achieve Climate Goals' Available at <https://arbitrationblog.kluwerarbitration.com/2024/01/31/2023-in-review-climate-change-and-isds-reshaping-investment-arbitration-to-achieve-climate-goals/> (Accessed on 25/04/2024)

⁹⁰ Muigua. K., 'The Viability of Arbitration in management of Climate Change Related Disputes in Kenya' Available at <http://kmco.co.ke/wp-content/uploads/2022/04/The-Viability-of-Arbitration-in-management-of-Climate-Change-Related-Disputes-in-Kenya-11th-April-2022.pdf> (Accessed on 25/04/2024)

⁹¹ Elborough. L., 'International Climate Change Litigation: Limitations and Possibilities for International Adjudication and Arbitration in Addressing the Challenge of Climate Change.' Available at <http://www.nzlii.org/nz/journals/NZJIEEnvLaw/2017/5.pdf> (Accessed on 25/04/2024)

⁹² International Chamber of Commerce., 'Resolving Climate Change Related Disputes through Arbitration and ADR' Op Cit

⁹³ Ibid

⁹⁴ Ibid

Other ADR processes such as mediation and negotiation can also promote effective management of climate change disputes by promoting collaborative approaches in managing disputes⁹⁵. Utilizing mediation in managing climate change disputes can encourage collaboration by encouraging parties and other stakeholders to focus on localized, tangible effects of climate change⁹⁶. It also fosters the participation of women and marginalized groups, who face particular climate risks, as well as environmental defenders and, where applicable, indigenous people, whose expertise can help identify key issues and priorities towards formulating acceptable outcomes⁹⁷. These processes can also help parties devise 'win-win' solutions outside of the usual judicial remedies, in a way that promotes ownership over the dispute and its outcome, and preserves the parties' relationships⁹⁸. Mediation is therefore perfectly suited for climate change disputes such as those concerning energy transition and renewable energy projects where it is desirable to preserve relationships and complete projects in order to realize access to clean and affordable energy for all⁹⁹.

ADR processes are therefore ideal in managing climate change disputes. It is therefore necessary to embrace ADR mechanisms for effective and efficient management of climate change disputes. It is also imperative to address challenges such as enforceability concerns in some ADR processes, lack of urgent protection measures such as injunctions,

⁹⁵ Muigua. K., 'Applying Collaborative Approaches towards Conflict Management' Available at <https://kmco.co.ke/wp-content/uploads/2024/03/Applying-Collaborative-Approaches-towardsConflict-Management-.pdf> (Accessed on 25/04/2024)

⁹⁶ United Nations Department of Political and Peacebuilding Affairs., 'The Implications of Climate Change for Mediation and Peace Processes' Available at <https://peacemaker.un.org/sites/peacemaker.un.org/files/DPPAPracticeNoteTheImplicationsofClimateChangeforMediationandPeaceProcesses.pdf> (Accessed on 25/04/2024)

⁹⁷ Ibid

⁹⁸ Hong Kong International Arbitration Centre., 'Beyond the Litigation Narrative: The Place and Roles of ADR in Climate change Disputes' Available at <https://www.hkiac.org/content/beyond-litigationnarrative-place-and-roles-adr-climate-change-disputes> (Accessed on 25/04/2024)

⁹⁹ Muigua. K., 'Attaining Environmental Justice through Alternative Dispute Resolution' Available at <https://kmco.co.ke/wp-content/uploads/2023/07/Attaining-Environmental-Justice-throughAlternative-Dispute-Resolution.pdf> (Accessed on 25/04/2024)

delays and costs, and inadequate legal, institutional, and human capacity in ADR in order to strengthen the role of these processes in managing climate change disputes¹⁰⁰.

3.2 ADR and Cyber Security

Technology has been described as a disruptive phenomenon that has the capacity to end traditional business models, to cast whole industries into oblivion, and to destroy traditional crafts, arts, and professions¹⁰¹. Rapid digitalization is affecting all aspects of life including the way we interact, work, shop and receive services as well as how value is created and exchanged¹⁰². Digital disruption and the growth of technology has crept into virtually all areas including the realm of ADR¹⁰³. Forms of ADR such as online mediation, online arbitration, and even block chain arbitration, which employs the same block chain technology as cryptocurrencies are growing¹⁰⁴. As a result a form of ADR known as Alternative Online Dispute Resolution is becoming more popular¹⁰⁵.

Digital dispute resolution has been described as the process of managing disputes on the internet through the use of suitable technology or platforms¹⁰⁶. It involves the use of technology to facilitate the rapid, cost effective and specialised resolution of disputes involving digital technology including crypto assets, cryptocurrency, smart contracts,

¹⁰⁰ Muigua. K., 'Utilizing Alternative Dispute Resolution in Climate Change Disputes' Op Cit

¹⁰¹ Eidemuller. H., & Wagner. G., 'Digital Dispute Resolution.' Available at <https://blogs.law.ox.ac.uk/business-law-blog/blog/2021/09/digital-dispute-resolution> (Accessed on 25/04/2024)

¹⁰² United Nations Conference on Trade and Development., 'Digital Economy Report: 2021.' Available at https://unctad.org/system/files/official-document/der2021_overview_en_0.pdf (Accessed on 25/04/2024)

¹⁰³ Muigua. K., 'The Evolving Alternative Dispute Resolution Practice: Investing in Digital Dispute Resolution in Kenya' Available at <https://kmco.co.ke/wp-content/uploads/2022/04/The-Evolving-Alternative-Dispute-Resolution-Practice-Investing-in-Digital-Dispute-Resolution-in-Kenya-Kariuki-Muigua.pdf> (Accessed on 25/04/2024)

¹⁰⁴ Ibid

¹⁰⁵ Ibid

¹⁰⁶ Sadushi. M., 'The Theory And Practice Of Dispute Resolution In The Digital Age.' Available at <https://ejournals.org/gjplr/vol-5-issue-7-december-2017/theory-practice-dispute-resolution-digitalage/> (Accessed on 25/04/2024)

distributed ledger technology, and fintech applications¹⁰⁷. Digital Dispute Resolution is often compared to Online Dispute Resolution (ODR) which refers to a set of processes that allow for the resolution of disputes via online mechanisms such as the internet or some form of technology that allows for virtual communication¹⁰⁸.

Technology has the ability to make dispute resolution more efficient¹⁰⁹. It holds the promise for an improved dispute resolution landscape that is based on fewer physical, conceptual, psychological and professional boundaries, while enjoying a higher degree of transparency, expeditiousness, efficiency, accessibility, participation and change¹¹⁰. Technology can ensure that every case has a single data set that can be used at every stage of the dispute resolution process in order to avoid the repetition of the same facts and issues in pleadings, witness statements, expert reports, skeleton arguments and opening and closing written submissions¹¹¹.

The growth of digital dispute resolution provides an opportunity for utilizing ADR in the cyber space¹¹². Utilizing ADR in the cyber space is a more feasible option in comparison to traditional ADR for disputants who are unable to afford travelling long distance or for those involved in e-commerce disputes for low monetary value¹¹³. Online

¹⁰⁷ AShurst., 'Digital Dispute Resolution Rules Published.' Available at <https://service.betterregulation.com/sites/default/files/digital-dispute-resolution-rules-published.pdf> (Accessed on 25/04/2024)

¹⁰⁸ Mania. K., 'Online Dispute Resolution: The Future of Justice.' *International Comparative Jurisprudence*, No. 1 of 2015, (pg 76-86)

¹⁰⁹ Ibid

¹¹⁰ Rabinovich-Einy..O., & Katsh. E., 'Reshaping Boundaries in an Online Dispute Resolution Environment.' *International Journal of Online Dispute Resolution*, Volume 1, No. 1 (2014)

¹¹¹ Ashurst., 'Dispute Resolution in need of a "Digital Makeover?!"' Available at <https://www.ashurst.com/en/insights/dispute-resolution-in-need-of-a-digitalmakeover/#:~:text=Technology%20could%20be%20used%20to,opening%20and%20closing%20written%20submissions> (Accessed on 25/04/2024)

¹¹² Online ADR- An Avenue for Resolving Disputes in Cyberspace., Available at <https://www.umlawreview.com/lex-in-breve/online-adr-an-avenue-for-resolving-disputes-in-cyberspace> (Accessed on 25/04/2024)

¹¹³ Ibid

disputes often arise between individuals from great distances, where at least one party will be required to travel the distance if the traditional mode of ADR is relied upon¹¹⁴. Therefore, with the existence of ODR, parties can now participate in an ADR process from their respective preferred location and this simultaneously reduces cost and travelling time¹¹⁵.

ADR processes are therefore ideal in managing disputes in the cyber space by balancing legal considerations with complex technological dimensions¹¹⁶. It has been pointed out that the cyberspace, characterized by its global connectivity and rapid evolution, spans a wide range of activities from e-commerce transactions to the protection of IP rights¹¹⁷. These digital interactions often transcend geographical boundaries, rendering traditional litigation processes cumbersome, time-consuming, and expensive¹¹⁸. It is therefore possible to confront disputes that intertwine legal issues with intricate technical aspects in the cyber space therefore necessitating expertise that is applicable across the domains of law and technology¹¹⁹. ADR, with its diverse range of methods such as mediation, arbitration, and negotiation, presents a viable option that aligns with the dynamic nature of cyberspace while addressing the specific demands of these complex disputes¹²⁰.

Despite the viability of ADR in managing disputes in the cyber space, its use raises several cyber security concerns. The technology systems supporting digital dispute resolution may be subject to cyberattacks¹²¹. Unauthorized persons may access the system and

¹¹⁴ Ibid

¹¹⁵ Ibid

¹¹⁶ Singh. B., 'Unleashing Alternative Dispute Resolution (ADR) in Resolving Complex Legal-Technical Issues arising in Cyberspace Lensing E-Commerce and Intellectual Property' Available at <https://rbadr.emnuvens.com.br/rbadr/article/view/183> (Accessed on 25/04/2024)

¹¹⁷ Ibid

¹¹⁸ Ibid

¹¹⁹ Ibid

¹²⁰ Ibid

¹²¹ Muigua. K., 'Legal Practice and New Frontiers: Embracing Technology for Enhanced Efficiency and Access to Justice' available at <http://kmco.co.ke/wp-content/uploads/2020/06/Legal-Practice-andNew->

engage in unwarranted practices such as stealing of information, deleting information or sending unwanted information to the detriment of some parties¹²². Therefore, while utilizing ADR in the cyber space, the privacy and security of parties to a dispute is susceptible to being compromised since technology can be hacked or exploited to steal information and spy on people among other malpractices¹²³. It is therefore necessary to strengthen cyber security in order to enhance the viability of ADR in managing disputes in the cyber space.

3.3 ADR and Globalization

Globalization has influenced the function of international law and with it the mechanisms used to manage international conflicts and disputes¹²⁴. As a result of globalization, the practice of International Dispute Resolution has emerged¹²⁵. International dispute resolution envisages managing disputes between and among parties from different nationalities¹²⁶. Globalization has resulted in increase in trade and commerce between parties from different nationalities which activities have also lead to disputes between parties from different nations¹²⁷.

ADR is suitable in the era of globalization. Modes of ADR such as international arbitration and international mediation have developed to manage disputes involving parties from different nationalities as a result of globalization¹²⁸. International arbitration

[Frontiers-EmbracingTechnology-for-Enhanced-Efficiency-and-Access-to-Justice-Kariuki-MuiguaPh.D-June-2020.pdf](#) (Accessed on 25/04/2024)

¹²² Ibid

¹²³ Ibid

¹²⁴ Spain. A., 'International Dispute Resolution in an Era of Globalization' Available at <https://lawweb.colorado.edu/profiles/pubpdfs/spain/IntlDispRes-EraGlobalization.pdf> (Accessed on 25/04/2024)

¹²⁵ Ibid

¹²⁶ Ibid

¹²⁷ Ibid

¹²⁸ Muigua, 'Promoting International Commercial Arbitration in Africa' <<http://kmco.co.ke/wp-content/uploads/2018/08/PROMOTING-INTERNATIONAL-COMMERCIAL-ARBITRATION-IN-AFRICA.pdf>> (Accessed on 25/04/2024)

arises where parties having business locations in different countries¹²⁹; the venue where a significant part of the obligations is to be undertaken is situated outside the country where the parties ordinarily conduct their business activities;¹³⁰ and in instances where parties are in agreement that the substance of the arbitration case concerns more than one state.¹³¹ In international arbitration, arbitration guarantees neutrality in the determination of disputes and addresses differences that may arise as a result of multiple legal systems¹³². The role of ADR in the era of globalization has been enhanced by the New York Convention which offers an avenue for the recognition and enforcement of foreign awards in arbitration despite differences in jurisdictions between states.¹³³ The Convention provides common legislative standards towards this end¹³⁴. It is applicable to foreign awards in the state where a party seeks to enforce such an award.¹³⁵ In order to streamline implementation of foreign awards, the Convention precludes the imposition of onerous condition or fees in recognizing and giving effect to foreign awards in arbitration.¹³⁶ In Kenya, the Convention has been incorporated under the Arbitration Act.¹³⁷

The role of mediation in the era of globalization has also been enhanced by the adoption of the United Nations Convention on International Settlement Agreements Resulting from Mediation '*Singapore Convention*¹³⁸'. The Convention provides a legal framework for enforcement of settlement agreements resulting from international mediation¹³⁹. The

¹²⁹ Arbitration Act, No. 4 of 1995, Government Printer, Nairobi, S 3

¹³⁰ Ibid

¹³¹ Ibid

¹³² Moses, '*The Principles and Practice of International Commercial Arbitration*' 2nd Edition, 2017, Cambridge University Press

¹³³ Muigua, '*Promoting International Commercial Arbitration in Africa*' Op Cit

¹³⁴ Ibid

¹³⁵ UNCICA, '*Convention on the Recognition and Enforcement of Foreign Arbitral Awards*' (1958) Article 1 (1)

¹³⁶ Ibid, Article III

¹³⁷ Arbitration Act, S 36 (2)

¹³⁸ United Nations Convention on International Settlement Agreements Resulting from Mediation, United Nations, New York, 2019, '*Singapore Convention*' (adopted on December 20, 2018, came into force on September 12, 2020)

¹³⁹ Ibid

Convention aims to enhance the practice of international commercial mediation by building a bridge that would enable acceptability of international settlement agreements across states with different legal, social and economic systems¹⁴⁰. The Convention can cure challenges in international commercial mediation by providing an elaborate procedural framework for the conduct of international commercial mediation and enforcement of mediation settlement agreements¹⁴¹.

ADR mechanisms such as international arbitration and international mediation are therefore developing in light of globalization. In addition, technology has facilitated the globalization of ADR through the rapid transfer of information and know-how between national and transnational actors therefore accelerating the dispute resolution export explosion¹⁴². Globalization has also influenced the growth of ODR and its continuing development and integration into larger transactional and conflict management systems¹⁴³. Globalization has therefore shaped the growth of ADR. It has been argued that in today's era of globalization ADR mechanisms can help build bridges between people, cultures, and entire nations¹⁴⁴.

4.0 Conclusion

ADR is relevant in the context of emerging challenges of climate change, cyber security, and globalization. ADR is applicable in climate action by providing viable options for effective management of climate change disputes¹⁴⁵. The growth of digital dispute

¹⁴⁰ Ibid

¹⁴¹ Muigua. K., 'Adopting the Singapore Convention in Kenya: Insight and Analysis' Available at <https://kmco.co.ke/wp-content/uploads/2020/09/Adopting-the-Singapore-Convention-in-Kenya-Insight-and-Analysis-15th-Sept.pdf> (Accessed on 25/04/2024)

¹⁴² Alexander. N., 'Mobile Mediation: How Technology is Driving the Globalization of ADR' *Hamline Journal of Law and Public Policy*, 2006 , Vol. 27. pp. 243-262

¹⁴³ Ibid

¹⁴⁴ Lukasz. B., 'Mediation in the Era of Globalization: Building Bridges of Understanding in a World Full of Diversity.' Available at https://www.linkedin.com/pulse/mediation-era-globalization-building-bridges-world-full-bodzinskihlikf?utm_source=share&utm_medium=member_android&utm_campaign=share_via (Accessed on 25/04/2024)

¹⁴⁵ Muigua. K., 'Utilizing Alternative Dispute Resolution in Climate Change Disputes' Op Cit

resolution also provides an opportunity for utilizing ADR in the cyber space¹⁴⁶. Globalization has also shaped the growth of ADR. Modes of ADR such as international arbitration and international mediation have also developed to manage disputes involving parties from different nationalities as a result of globalization¹⁴⁷. In light of globalization, ADR mechanisms can help build bridges between people, cultures, and entire nations¹⁴⁸. It is therefore necessary to strengthen the legal, institutional, policy, and human capacity on ADR in order to make these processes more suitable to emerging challenges¹⁴⁹. It is also imperative to enhance data privacy and security in digital dispute resolution in order to align ADR with cyber security requirements¹⁵⁰. The role of ADR in the face of globalization can be strengthened by promoting processes such as international arbitration and international mediation by creating suitable domestic environments for the uptake of these mechanisms¹⁵¹. ADR is applicable in the context of emerging challenges of climate change, cyber security, and globalization and therefore needs to be widely embraced.

¹⁴⁶ Online ADR- An Avenue for Resolving Disputes in Cyberspace., Op Cit

¹⁴⁷ Muigua, 'Promoting International Commercial Arbitration in Africa' Op Cit

¹⁴⁸ Lukasz. B., 'Mediation in the Era of Globalization: Building Bridges of Understanding in a World Full of Diversity.' Op Cit

¹⁴⁹ Muigua. K., 'Utilizing Alternative Dispute Resolution in Climate Change Disputes' Op Cit

¹⁵⁰ Muigua. K., 'Navigating the Digital Dispute Resolution Landscape: Challenges and Opportunities' Available at <https://kmco.co.ke/wp-content/uploads/2023/08/Navigating-the-Digital-Dispute-Resolution-Landscape-Challenges-and-Opportunities-.pdf> (Accessed on 25/04/2024)

¹⁵¹ Muigua, 'Promoting International Commercial Arbitration in Africa' Op Cit

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