

**The function of international law in
defending the environment against
climate change**

دكتور

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دكتوراه في القانون الدولي

The function of international law in defending the environment against climate change

ملخص البحث :

تهدف هذه الورقة البحثية إلى محاولة توضيح أهم الأسباب مع التركيز على عرض الظاهرة السلبية لتغير المناخ وإظهار مدى خطورتها وتهديدها للحياة كما نعرفها، وتسعى هذه الورقة إلى تسليط الضوء على موضوع له أهمية كبيرة، وخاصة على نطاق عالمي وهو تغير المناخ. كما تم التأكيد على أهمية المجتمع الدولي باعتباره الفاعل الأساسي في الدفاع عن البيئة ضد جميع المخاطر، وخاصة ظاهرة تغير المناخ، والتي تم من أجلها تطوير عدد من الآليات المؤسسية والقانونية، بما في ذلك الهيئة الحكومية الدولية المعنية بتغير المناخ، وتبني عدد من المؤسسات الدولية، مثل اتفاقية الأمم المتحدة الإطارية بشأن تغير المناخ، لمعالجة هذه الظاهرة الضارة. كما تم وضع عدد من السياسات، مثل سياسات التخفيف والتكيف، لتقليل هذه المشكلة.

Abstract :-

This research paper aims to try to explain the most important reasons with an emphasis on presenting the negative phenomenon of climate change and demonstrating how dangerous and threatening it is to life as we know it, this paper seeks to shed light on a topic that is of great importance, particularly on a global scale: climate change. The importance of the international community was also emphasized since it is seen as the primary actor in defending the environment against all dangers, particularly the phenomenon of climate change, for which a number of institutional and legal mechanisms, including the Intergovernmental Panel on Climate Change, have been developed, and the adoption of a number of international institutions, such as the United Nations Framework Convention on Climate Change, to address this harmful occurrence. A number of policies, such as the mitigation and adaptation policies, have also been established to lessen this problem.

Keywords:-

The phenomenon of climate change, The international community, International law, Environment , Human rights.

i. Introduction :

Following the Cold War, the world saw a wave of subsequent developments and changes that led to the consolidation of new values and principles that formed the basis of the new international order. Additionally, new issues that had not previously been discussed emerged and now overshadow security, military, and strategic issues, such as the refugee crisis and terrorism. International and environmental challenges have emerged as the international community's top priorities. Climate change is one of the most significant environmental challenges that has drawn attention from the global community, and this has been reflected in the intense international efforts to agree on practical policies that restrict the production of gases that cause that restrict the release of gases that contribute to global warming and its consequences, as well as the pursuit of strategies for international cooperation and coordination of positions in order to arrive at "comprehensive governance" that can both prevent and enable disasters, as rationalizing the social and economic system in the short term would take a different path in production that could mitigate the adverse consequences affecting the climate, Of course, the fundamentally important institutions of the global system will decide on this. It is evident from this point on how crucial it is to research the phenomena of climate change, as well as how dangerous it is, what its primary causes are, and how to mitigate it. Of course, the fundamentally important institutions of the global system will decide on this. It is evident from this point on how crucial it is to research the phenomena of climate change, as well as how dangerous it is, what its primary causes are, and how to mitigate it. This brings up the issue that has to be addressed: How has the global community, across all spheres, addressed the phenomena of climate change on a global scale? To address this issue in a thorough and complete manner, the descriptive technique must be used. This involves concentrating on providing an accurate and ignorant-denying description of the reality of climate change, while outlining its origins and the consequences that arise from this phenomenon's existence; moreover, it employs the analytical technique, which aids its adherents in determining the fundamental reasons. reviewing a few international instruments and emphasizing their strong qualities in an effort to contribute something new.

A- Study objectives:

The study attempts to clarify the various impacts resulting from climate change in general, and on the environment in particular, and on the other hand, to identify the most important causes and effects resulting from it, and then review the international efforts that the international community has undertaken and is continuing to reduce the problems of this negative phenomenon, by focusing It focuses on three pivotal points: clarifying the role played by international bodies in confronting this phenomenon, as well as the most important international agreements established to reduce this phenomenon, and the last point is the policies established to confront the risks of climate change.

B. Research Methodology:-

The approach followed: Within the framework of this study, I adopted both the descriptive approach to determine the protection imposed by international law and international agreements, in addition to the analytical approach to evaluate the extent to which international law and international agreements contribute to protecting the environment from the effects of climate change.

ii. The reasons for climate change:

The interplay of natural and human causes leads to climate change. Variations in the Earth's orbit, solar variability, plate tectonics, and volcanic eruptions are examples of natural causes¹. Burning fossil fuels, deforestation, and industrial emissions of greenhouse gases are the main drivers of anthropogenic causes. These greenhouse gases, which include carbon dioxide, cause global warming by trapping heat in the atmosphere². The melting of glaciers and ice, the migration of species that are sensitive to temperature changes, and extreme weather occurrences are only a few of the effects brought about by the rise in global temperatures. Climate change can also be influenced by variations in solar activity, Earth's precession angle, and atmospheric pressure. Heat is redirected and regional temperature trends are influenced by ocean currents and water circulation, Current scientific research indicates that increased emissions of anthropogenic greenhouse gases, such as carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O), from human activities including burning fossil fuels, industry, and deforestation, are the main drivers of climate change. The earth's temperature rises gradually as a result of this greenhouse gas trapping heat in the atmosphere. Furthermore, natural factors that contribute to climate change include fluctuations in the Earth's orbit, solar variability, plate tectonics, and volcanic eruptions.³Recent studies, however, cast doubt on the idea that carbon dioxide produced by humans is the main cause of climate change, arguing that variations in solar energy output and the atmosphere's water vapor concentration could have a greater influence.

A-The effects of climate change on the environment:-

Numerous ecosystems and species are impacted by climate change, which has a substantial influence on the environment. Reduced agricultural production, biodiversity loss, rising sea levels, habitat loss, and an increase in the frequency of extreme weather events like heat waves, floods, and cyclones are all effects of global warming⁴. Climate change is a result of both natural and human-caused events, and it has a negative impact

¹ -Mohammad, Abdollahbeigi. (2020). Non-Climatic Factors Causing Climate Change. doi: 10.22034/JCR.2020.249615.1087.

² -Vijay, Kumar., Deeksha, Ranjan., K., S., Verma. (2021). Global climate change: the loop between cause and impact. doi: 10.1016/B978-0-12-822928-6.00002-2.

³ - P., Parvatha, Reddy. (2015). Causes of Climate Change. doi: 10.1007/978-81-322-2199-9_2.

⁴ - Miss., Bhagwatgeeta, Prabhu, Vairale. (2022). Global Warming Impacts on the Environment in the Last Century. Springer climate, doi: 10.1007/978-3-031-15501-7_3.

on air quality, sea levels, agriculture, vegetation, water resources, and environmental temperature⁵. The health consequences of climate change, which can affect people directly or indirectly through heat stress, extreme weather, and air pollution, can have an immediate and long-term impact on pregnant women and children. In order to solve these environmental concerns, mitigation techniques such as assisted migration and the creation of sustainable communities that are climate resilient are essential.

B- The negative consequences of climate change on nations:-

In many nations, migratory patterns, natural environments, and human health are all significantly impacted by climate change. Human health is being adversely affected by the rising frequency and intensity of climate-related events, such as extreme weather and sea level rise, which is also causing migration and displacement. These occurrences cause damage to food sources and ecosystems, which increases the risk of starvation and illness. Extreme heat exposure is linked to a number of harmful health effects in humans, such as heatstroke, renal damage, mental health issues, and heart and respiratory conditions⁶. In certain areas, vector-borne illnesses like dengue and malaria are also on the rise. Numerous socioeconomic, cultural, and demographic factors influence the complex and non-linear effects of climate change on human health.

iii. Human rights and climate change:-

The right to life, the right to food, the right to water, the right to health, the right to live in a healthy environment, and the right to self-determination are just a few of the rights that are significantly impacted by climate change. Human rights organizations and the Paris Agreement have acknowledged the link between climate change and human rights, including wording on human rights in their rulings and mentioning nations' commitments under the agreement explicitly⁷. It is imperative that actions be taken to safeguard human rights in the face of climate change, and the international system need to strengthen such protections. The application of human rights protection measures is complicated by climate change. Human rights are important in the context of climate change⁸. This raises questions about justice, particularly the responsibility of wealthier nations to help disadvantaged nations adapt to climate change⁹.

A- The response of governments and international organizations to the intersection between climate change and human rights:-

⁵ - Emmanuel, S., Kolawole., W.I., Okonkwo. (2022). Impacts of Climate Change on Environment and the Remedies. International journal of weather, climate change and conservation research, doi: 10.37745/ijwcccr.15/vol8n219.

⁶ - von, Stengel., Bernhard. (2023). A Comprehensive Review on the Climate Change and Its Impact on Health. doi: 10.20944/preprints202305.0159.v1.

⁷ - Annalisa, Savaresi. (2022). Human rights and climate change. Climate Change and Law Collection, doi: 10.1163/9789004322714_cclc_2021-0073-290.

⁸ - Hirdan, Katarina, de, Medeiros, Costa., Regina, Villas, Bôas. (2023). Climate changes and human rights: a discussion on justice. Concilium, doi: 10.53660/clm-1260-23k14.

⁹ - Rose, Barua. (2022). Addressing climate change adaptation through human rights and promotion of climate justice. doi: 10.58710/bjlv20n2y2022a02.

Governments and international organizations have responded to the intersection of climate change and human rights by recognizing the potential impact of climate change on human rights and incorporating human rights language in their decisions¹⁰. There is a rising emphasis on human rights principles in addressing climate change, and efforts are being made to enhance the protection of human rights in this context. Some international NGOs have mobilized a human rights framing of climate change, while others have not, with staff perception of an organization's identity and its fit with the human rights and climate change frame influencing their engagement on the issue. It is well acknowledged that children's rights are negatively impacted by climate change, and in an effort to address these concerns, youth-led climate lawsuits have been brought before regional courts and international human rights organizations. It is suggested that in the context of the Paris Agreement, parties to the European Convention on Human Rights ought to take reasonable and sufficient steps to protect human rights against the effects of climate change¹¹.

B-International agreements address the intersection between climate change and human rights:-

The relationship between human rights and climate change is being more widely acknowledged by international accords. Human rights organizations have recognized that responses to climate change may have an impact on human rights¹². A notable advancement in this field was the Paris Agreement, which specifically mentioned nations' duties under international human rights law. States are also required by the European Convention on Human Rights (ECHR) to protect human rights against the effects of climate change, which includes lowering greenhouse gas emissions and pursuing temperature targets. Nevertheless, there are obstacles to putting into practice a human rights-based strategy against climate change, including the distinction between climate law and human rights law, functional limitations in the UN human rights framework, and assigning blame for climate damage to individual governments¹³. Notwithstanding these obstacles, resolving climate injustices and guaranteeing the safety of vulnerable countries and people depend on the acknowledgment of human rights in the context of climate change.

C-The challenges and opportunities for implementing effective climate change adaptation and mitigation measures that respect human rights:-

that uphold human rights include assigning blame for climate damage to states, the extraterritorial application of international human rights law, the exclusivity of climate law

¹⁰ - Annalisa, Savaresi. (2022). Human rights and climate change. Climate Change and Law Collection, doi: 10.1163/9789004322714_cclc_2021-0073-290.

¹¹ - Christina, Voigt. (2022). The climate change dimension of human rights: due diligence and states' positive obligations. Journal of Human Rights and The Environment, doi: 10.4337/jhre.2022.00.05.

¹² - Annalisa, Savaresi. (2022). Human rights and climate change. Climate Change and Law Collection, doi: 10.1163/9789004322714_cclc_2021-0073-290.

¹³ - Rose, Barua. (2022). Addressing climate change adaptation through human rights and promotion of climate justice. doi: 10.58710/bjlv20n2y2022a02.

and international human rights law, operational obstacles within the UN human rights system, and legal difficulties facing UN Treaty Body mechanisms¹⁴. Further barriers to the acknowledgment of human rights requirements in climate change adaptation include governmental reluctance, global unfairness, and political and economic constraints. Nonetheless, there exist prospects for advancement, such as the integration of human rights terminology into choices on climate change and the acknowledgement of governments' human rights responsibilities in the Paris Agreement. Additional opportunities include updating these rights to address the challenges of the Anthropocene, such as the protection of planetary boundaries and the rights of future generations and nonhumans, as well as applying current human rights tools to address the effects of climate change on economic and social rights¹⁵.

D- The key legal frameworks and mechanisms in place to address the impacts of climate change on human rights:-

The acknowledgment by human rights agencies that climate change and climate change response measures may influence the enjoyment of human rights is one of the main legal frameworks and procedures in place to address the implications of climate change on human rights. The first international environmental deal to specifically include governments' duties under the human rights treaty was the 2015 Paris Agreement¹⁶. Particularly when it comes to the effects of climate change that Indigenous peoples in industrialized nations face, human rights law has the ability to close the legal gaps left by international climate change legislation on loss and damage. Human rights law can give states, groups, and individuals who are vulnerable to climate change a path to justice. However, there are obstacles to be overcome, including the distinction between international and climate law, operational difficulties in the UN human rights system, and the assigning of blame for climate damage to individual states. In light of climate change, efforts are being made to strengthen the protection of human rights¹⁷.

iv. Climate change and armed conflict:-

The topic of climate change and its connection to armed conflict is intricate and multifaceted. The empirical literature currently in publication has not been able to establish a systematic, causal link between climate change and the possibility of armed conflicts in the future,¹⁸ despite some research suggesting that this may be the case. However, it has been acknowledged that climate change may operate as a catalyst to worsen underlying

¹⁴ - Annalisa, Savaresi. (2022). Human rights and climate change. Climate Change and Law Collection, doi: 10.1163/9789004322714_cclc_2021-0073-290.

¹⁵ - Ricardo, Rada, Ahmad, Hayek. (2023). Climatizing Human Rights. doi: 10.1093/oxfordhb/9780197550021.013.68.

¹⁶ - Rose, Barua. (2022). Addressing climate change adaptation through human rights and promotion of climate justice. doi: 10.58710/bjlv20n2y2022a02.

¹⁷ - Sri, Wartini., Jawahir, Thontowi. (2023). The Impact of Climate Change on the Protection of Human Rights in Developing Countries. KnE Social Sciences, doi: 10.18502/kss.v8i9.13363.

¹⁸ -Nur, Aini, Rakhmawati. (2022). Climate Change and Armed Conflict. doi: 10.1007/978-94-6265-515-7_39.

institutional, social, and economic circumstances, raising the possibility of violent incidents. Reducing or eliminating the detrimental effects of climate change on armed conflicts can be achieved in large part by investing in resilience building. Recognizing that our knowledge of the connection between armed conflicts and climate change is still lacking is crucial, and more research is needed to disentangle the complex interactions between climatic changes, socio-economic factors, and institutional elements¹⁹. Additionally, factors such as population, natural resources, infrastructure availability, and quality of institutions also contribute to the dynamics of armed conflicts in relation to climate change .

A-Climate change and its impact on armed conflicts:-

It has been shown that armed conflicts are impacted by climate change. Research has indicated that immigration due to climate change raises the likelihood of disputes arising between the nations of origin and destination for migrants .Daily military operations also contribute to climate change, although this point is frequently left out of the popular conversation on the issue . Large-scale climate-related catastrophes have the potential to alter the dynamics of current armed conflicts, with some increasing or staying the same while others de-escalating or staying the same .Empirical data indicates that climatic conditions increase the likelihood that internal armed conflicts would break out, and that mitigating climate change can help bring about peace by lowering the frequency of armed conflicts . They emphasize the need for a contextualized knowledge of these processes, emphasizing the ways in which vulnerable communities are affected differently and the ways in which women may address issues of insecurity and environmental degradation .

B- The impact of climate change on international disputes and wars:-

It has been shown that wars and international issues are impacted by climate change. Research has indicated that immigration due to climate change raises the likelihood of disputes between nations of origin and destination . For instance, the Nile region has been designated as a hotspot where climate change may intensify the escalation of hostilities between Ethiopia and Egypt . There is currently little empirical evidence to support the complicated and poorly understood link between armed conflicts and climate change . But the idea that climate change exacerbates conflict risks related to transboundary water resources, food security, sea levels, flood hazards, and migration patterns is beginning to gain traction . Because of the shortage of resources, climate change is viewed as a danger multiplier that might intensify current conflicts . All things considered, even if it might not be the main reason behind wars, climate change plays a significant role in their genesis and might intensify them.

¹⁹ - Federica, Cappelli., Caterina, Conigliani., Valeria, Costantini., Ketu, Lelo., Anil, Markandya., Elena, Paglialunga., Giorgia, Sforna. (2018). Climate Change and Armed Conflicts African Observatory (CACAO): a georeferenced map of Africa.

C- Climate-related factors contribute to the escalation or de-escalation of armed conflicts:-

Climate-related elements play a multifaceted role in either intensifying or decreasing violent conflicts. Significant climate-related disasters may cause shifts in the dynamics of conflicts, resulting in the escalation, de-escalation, or stagnation of some conflicts²⁰. Following a disaster, there is a greater likelihood that conflict intensity may shift in vulnerable nations²¹. Although the effects differ by location, the impact of climate conditions on the likelihood of armed conflict has been growing over the past few decades. Extreme precipitation or positive temperature variations are linked to a global increase in the likelihood of armed conflict. Reducing the likelihood of armed conflicts and fostering peace can be achieved via effectively managing climate change²². It is necessary to take into account stable background circumstances, climatic aberrations, and their intricate patterns in order to comprehend the likelihood of armed conflict.

D- Climate change can be used as a tool to resolve conflicts or build peace in areas affected by armed violence:-

It has been noted that there are several ways in which climate change affects sustainable development, humanitarian aid, peace building, and conflict prevention²³. It is complicated and still unclear how armed conflicts and climate change are related. Threats can be multiplied by climate change, which can exacerbate current conflict dynamics and lead to the emergence of new ones. Given the historical resistance of certain locations to climatic variability and the effect of other factors like ongoing wars, it is challenging to determine the exact degree to which climate variability affects conflict dynamics. It has been discovered that variations from the average climate, in both agricultural and non-agricultural areas, raise the probability of violence²⁴. It has been demonstrated that variations in the climate affect the likelihood of conflicts over wide geographical ranges, indicating the necessity for adaptation strategies that take into consideration a variety of spatial interrelationships. To address the persistence of violence, planning adaption techniques for climate resilience should be linked with peacekeeping support measures.

E-The correlation between climate change and armed conflict in terms of causality and effect:-

²⁰ - Tobias, Ide. (2023). Rise or Recede? How Climate Disasters Affect Armed Conflict Intensity. *International Security*, doi: 10.1162/isec_a_00459.

²¹ - Mengmeng, Hao., Fangyu, Ding., Xiaolan, Xie., Jingying, Fu., Yushu, Qian., Tobias, Ide., Jean-Francois, Maystadt., Shuai, Chen., Quansheng, Ge., Dong, Jiang. (2022). Varying climatic-social-geographical patterns shape the conflict risk at regional and global scales. *Humanities & social sciences communications*, doi: 10.1057/s41599-022-01294-2.

²² - Mariagrazia, D'Angeli., Giovanni, Marin., Elena, Paglialunga. (2022). Climate Change, Armed Conflicts and Resilience. *Social Science Research Network*, doi: 10.2139/ssrn.4028435.

²⁴ - Adam, Savelli., Frans, Schapendonk., Tanaya, Dutta, Gupta., Grazia, Pacillo., Peter, Läderach. (2023). Climate change, mobility and violent conflict: a typology of interlinked pathways. *International Development Planning Review*, doi: 10.3828/idpr.2023.2.

The link between armed conflict and climate change is intricate and multifaceted. There are significant information gaps about the causal relationships between armed conflict and climate change, and there is a dearth of empirical evidence on this issue²⁵. Nonetheless, research indicates that significant climate-related calamities may influence the course of continuing hostilities. Depending on the susceptibility of the participating nations, armed conflicts may grow, de-escalate, or stay the same following such calamities²⁶. Globally, there is a correlation between climate variability, including positive temperature deviations or severe precipitation, and a higher likelihood of armed conflict²⁷. Variations in typical climatic parameters, such temperature and the frequency of rainy days, have a consistent effect on the likelihood of conflict, with the danger of violence rising if climatic standards are deviated from²⁸. Overall, there is evidence to show that elements associated to climate change might affect conflict dynamics, even if the relationship between climate change and armed conflict is complicated.

v. The impact of international legal rules on the phenomenon of climate change:-

The legal framework has evolved in response to the impacts of climate change through various means. Climate litigation has played an important role in facilitating this change by incorporating new ideas and arguments into international law²⁹. International legal systems have also developed in the field of combating climate change, with the establishment of international obligations and cooperation in the field of adaptation.

A- International humanitarian law and climate change:-

Applying international humanitarian law to respond to climate change requires a harmonious interpretation and application of the United Nations (UN) climate change regime and the law of occupation. Additionally, a reconfiguration of the jurisdictional tenets of international human rights law (IHRL) is necessary to address the global nature of climate change impacts. The existing approaches to the problem of climate-induced displacement under IHRL remain unclear and debatable . However, recent developments in international refugee law (IRL) have emphasized the legal protections for internally displaced persons (IDPs) and climate refugees . Moreover, the application of artificial intelligence (AI) in assessing the degree of disaster-driven human displacement (DHD)

²⁵ - Tobias, Ide. (2023). Rise or Recede? How Climate Disasters Affect Armed Conflict Intensity. *International Security*, doi: 10.1162/isec_a_00459.

²⁶ - Asmeret, Asefaw, Berhe. (2022). On the relationship of armed conflicts with climate change. *PLOS climate*, doi: 10.1371/journal.pclm.0000038.

²⁷- Nur, Aini, Rakhmawati. (2022). Climate Change and Armed Conflict. doi: 10.1007/978-94-6265-515-7_39.

²⁸ - Quansheng, Ge., Mengmeng, Hao., Fangyu, Ding., Dong, Jiang., Jürgen, Scheffran., David, Helman., Tobias, Ide. (2022). Modelling armed conflict risk under climate change with machine learning and time-series data. *Nature Communications*, doi: 10.1038/s41467-022-30356-x.

²⁹ - Khurram, Usman. (2023). IHL in the era of climate change: The application of the UN climate change regime to belligerent occupations. *International review of the Red Cross*, doi: 10.1017/s1816383123000188.

poses fresh difficulties for impacted communities trying to get legal protection³⁰. The deployment of bias-free and nondiscriminatory AI in conjunction with a hybridized interpretation of international law can help to solve these issues and strengthen the legal rights afforded to DHD individuals and climate refugees.

Applying international humanitarian law to catastrophes linked to climate change has intricate and varied legal ramifications. As a result of recent advancements in international human rights legislation, nations are now required to plan ahead and be prepared for potential calamities³¹. However, the rising frequency and intensity of extreme weather events brought on by climate change make it more difficult to apply these measures. There are gaps in the current legal system's ability to meet the requirements of those displaced by climate-related disasters, notably the Refugee Convention. Current international accords do not sufficiently address the issue of climate refugees, leaving many displaced people without legal recognition or protection³². A modern international legal framework is required to handle the unique difficulties presented by displacement brought on by climate change³³. This framework must define the status of environmental migrants and create tools for decision-making on resettlement.

B- The impact of climate change on international watercourse and lake law disputes and international maritime law:-

When there are overlapping jurisdictions, international watercourse law and international maritime law interact. The legal basis for international environmental law (IEL) at sea, including the prevention and management of pollution, is established by the 1982 United Nations Convention on the Law of the Sea. However, the usage of common freshwater resources, such as lakes, rivers, and groundwater, is governed by international watercourse law³⁴. The specific boundaries of the 1997 UN Convention on the legislation of the Non-Navigational Uses of International Watercourses remain unclear, despite the fact that this body of legislation establishes guidelines for non-navigational uses of international watercourses. One of the main tenets of international water law is reasonable usage, which calls for the fair and reasonable use of international waterways. In cases of overlapping jurisdictions, the application of these different legal frameworks may need to be reconciled to ensure the equitable and sustainable use of shared water resources.

³⁰ - Przemysław, Osóbka. (2018). The problem of “climate refugees” in view of international humanitarian law – selected issues. doi: 10.5604/01.3001.0013.0368.

³¹ - Miriam, Cullen. (2020). Disaster, Displacement and International Law: Legal Protections in the Context of a Changing Climate. Politics and Governance, doi: 10.17645/PAG.V8I4.3311.

³² - Nicoleta-Florina, Moraru., Oksana, Morgunova. (2022). Climate Refugees" in a Legal Vacuum: To Develop a System of Assistance, Recognition and Compensation. Habarşy - Ál-Farabi atyndagy Qazaq memlekettik ulttyq universiteti. Halyqaralyq qatynastar žene Halyqaralyq qūkyq seriāsy, doi: 10.26577/irilj.2022.v100.i4.05.

³³ - Denise, Margaret, S., Matias. (2020). Climate humanitarian visa: international migration opportunities as post-disaster humanitarian intervention. Climatic Change, doi: 10.1007/S10584-020-02691-9.

³⁴ - Andrew, Norris. (2023). The Intersection of International Environmental Law and International Humanitarian Law at Sea. Journal of International Criminal Justice, doi: 10.1093/jicj/mqad001.

One major worry is how climate change may affect conflicts pertaining to international watercourse and lake law as well as international marine law. Sea level rise, sea ice melting, saltwater intrusion, rising water temperatures, storms and storm surges, and ocean acidification are just a few of the rapid biophysical changes in the oceans and seas that are being caused by climate change. In order to address climate change and its effects on the seas, the International Maritime Organization and the United Nations Framework Convention on Climate Change (UNFCCC) are crucial. In addressing these concerns, international law concepts and duties pertaining to climate change are also pertinent³⁵. To lessen possible harm, the effects of climate change on international legal systems, such as disputes over watercourse and lake law, are being examined. Particular measures are required to protect the rights and territory of Small Island Developing States (SIDS), since they are more susceptible to the effects of climate change on maritime law.

Lake law issues and international watercourse disputes are significantly impacted by climate change. More disagreements over water usage and access across national boundaries have resulted from the increased strain on water resources brought on by droughts and shifting rainfall patterns, which has been made worse by fast industrialization. Although climate change was not taken into account when India and Pakistan drafted the Indus Waters Treaty (IWT) in 1960, developments in hydrology and conflict resolution have made it clear that the treaty's knowledge and practice deficiencies must be filled. Water availability—including volume, time, frequency, and quality—has changed due to climate change, which has an effect on the water supply and raised tensions³⁶. Current international water rules and regulations must take into account climate change in order to guarantee sustainable management of water resources. The impacts of climate change on transboundary water resources, such as changing frequency and intensity of extreme events, present unique challenges for river functionality and the stability of international river boundaries³⁷.

C-Climate change and international environmental law:

States' duty to exercise due diligence and to restrict and reduce their greenhouse gas emissions are two specific elements of international environmental law that address climate change. Climate treaties, customary international law, unilateral statements, and perhaps human rights accords give rise to these commitments³⁸. One example of domestic legislation including climate change measures is the UK's Climate Change Act 2008, which

³⁵ - Indi, Hodgson-Johnston. (2013). International law in the era of climate change. *The Polar Journal*, doi: 10.1080/2154896X.2013.790196.

³⁶ - Sam, Grainger., Sam, Grainger., Declan, Conway. (2014). Climate change and International River Boundaries: fixed points in shifting sands. *Wiley Interdisciplinary Reviews: Climate Change*, doi: 10.1002/WCC.306.

³⁷ - Patricia, Wouters. (2011). The International Law of Watercourses: New Dimensions. *Social Science Research Network*, doi: 10.1163/EJ.9789004192911.I-541.36.

³⁸ - John, F., McEldowney. (2021). Climate change and the law. doi: 10.1016/B978-0-12-822373-4.00018-5.

has a target of "net zero" emissions by 2030³⁹. In order to combat climate change, international law provides a framework for dispute resolution, conflict resolution, and adjudication. However, the willingness of politicians and policy makers to undertake strong solutions to climate change will determine how successful these measures are.

In the context of climate change, the enforcement of international environmental law is largely dependent on the courts. By charting nations' responsibilities under international law, they can exert pressure on governments to act decisively and enact strict mitigating measures. Both national and international tribunals have the authority to oversee and evaluate actions to mitigate climate change⁴⁰. Courts create new constitutional environmental standards by interpreting laws that are authorized by the constitution in light of directive principles. Domestic courts establish a procedural nexus between international and domestic law by connecting domestic climate change rules to the Paris Agreement's long-term temperature objective. In the areas of climate change, human rights, and environmental protection, national courts are leading the way in international legal development. Courts, such as the German Federal Constitutional Court, strengthen international cooperation in climate protection and enforce the internationally agreed regime.

vi. The measures taken by the international community to address the issue of climate change.

In order to address climate change, the world community has taken particular measures. In order to combat climate change, provide sustainable management of water and sanitation, and lower the risk of disasters, international frameworks such as the Paris Agreement and the 2030 Agenda for Sustainable Development have been adopted. Two key components of global climate policy are the Kyoto Protocol and the United Nations Framework Convention on Climate Change (UNFCCC). States, coalitions, businesses, and the media have all taken steps to adapt to and lessen the effects of climate change, including as enacting strong climate regulations and shifting to a low-carbon economy⁴¹. Global goals, poverty alleviation, and development are all at risk from climate change, but these risks can be lessened via adaptation and adjustment⁴². A multilateral approach involving all stakeholders is crucial for achieving global climate goals and transitioning to a green

³⁹ - Sabine, Schleiermacher. (2022). International Law Obligations on Climate Change Mitigation. doi: 10.1093/oso/9780192843661.001.0001

⁴⁰ - Afra, Sturm., Lucas, Villela, Cassini. (2023). Allocation of Institutional Responsibility for Climate Change Mitigation: Judicial Application of Constitutional Environmental Provisions in the European Climate Cases *Arctic Oil*, *Neubauer*, and *l’Affaire du siècle*. Journal of Environmental Law, doi: 10.1093/jel/eqac024.

⁴¹ -MICHAEL, O’CONNELL. (2022). International Climate Policy. doi: 10.1016/b978-0-08-102975-6.00020-0.

⁴² -Olena, Shevchenko. (2019). The role of traditional and new international relations actors in addressing climate change. doi: 10.18778/1427-9657.08.03.

economy. The impacts of these actions are ongoing, with progress being made towards sustainable development, climate mitigation, and adaptation.

A-United Nations Convention on Climate Change:-

Established in 1992 under the United Nations' supervision, the United Nations Framework Convention on Climate Change (UNFCCC) is an international convention. In order to stop climate change and prepare for its effects, it seeks to enhance international collaboration⁴³. In order to prevent hazardous human interference with the climate system, governments must cooperate to stabilize greenhouse gas concentrations in the atmosphere, as outlined by the UNFCCC. Adoption of the Paris Agreement in 2015, which seeks to keep global warming to far below 2 degrees Celsius over pre-industrial levels, was one of the UNFCCC's major accomplishments. Countries gather regularly to debate and negotiate climate-related problems in Conferences of the Parties (COP), which are facilitated by the UNFCCC⁴⁴.

The United Nations Framework Convention on Climate Change (UNFCCC), which is run by the UN, is a vital forum for international collaboration on climate change issues. It facilitates discussions and advances sustainable solutions.

1-The key provisions of the United Nations Convention on Climate Change (UNFCCC) and how have they evolved over time:-

The key provisions of the United Nations Framework Convention on Climate Change (UNFCCC) include promoting global cooperation in combating climate change, stabilizing greenhouse gas concentrations, and protecting the climate system as a shared resource. Over time, the UNFCCC has evolved with major advances in international climate change policy and processes, such as the Kyoto Protocol and the Paris Agreement⁴⁵. The Paris Agreement represented a turning point in the climate debate, allowing states to set their own emission targets and promoting practical approaches for tackling climate change⁴⁶. Trends including the relaxing of obligations, the employment of tools based on the market, and the growing significance of nonstate players have also been observed in the design of global climate legislation. The UNFCCC is an intricate intergovernmental

⁴³ - the role of the united nations in mitigating global climate change". Russian Law Journal(2023)., doi: 10.52783/rlj.v11i9s.1797.

⁴⁴ - MICHAEL, O'CONNELL. (2022). International Climate Policy. doi: 10.1016/b978-0-08-102975-6.00020-0.

⁴⁵ - Timothy, Cadman. (2019). The United Nations Framework Convention on Climate Change. doi: 10.1057/978-1-137-45443-0_23.

⁴⁶ - Jonathan, W., Kuiper., Jonathan, W., Kuiper., Heike, Schroeder., Björn-Ola, Linnér., Björn-Ola, Linnér., Björn-Ola, Linnér. (2018). The Evolution of the UNFCCC. Annual Review of Environment and Resources, doi: 10.1146/ANNUREV-ENVIRON-102017-030119.

framework whose past and future evolution have been affected by a number of instruments, such as the 2015 Paris Agreement and the Kyoto Protocol⁴⁷.

2-The challenges of the United Nations Convention on Climate Change (UNFCCC) and how have they evolved over time:-

Over time, the United Nations Framework Convention on Climate Change's (UNFCCC) difficulties have changed. At first, efforts were concentrated on reducing greenhouse gas emissions, but in the last several years, attention has shifted to climate change adaptation. Effective climate mitigation has faced obstacles from the fossil fuel industry, conventional economic theory, national interests, and political short-termism. Global greenhouse gas emissions have been steadily rising as a result of these issues and insufficient legislative responses. Furthermore, there is a discrepancy between the Paris Agreement's aims and the possible outcomes of the global climate governance system, which presents serious difficulties like pressure on carbon emissions. Nonetheless, there are technologically and economically feasible remedies available; their successful implementation requires worldwide cooperation⁴⁸.

B-The role of the Intergovernmental Panel on Climate Change (IPCC):-

International climate accords and policy are significantly shaped by the Intergovernmental Panel on Climate Change (IPCC). The IPCC strives to be both policy-neutral and policy-relevant in its evaluation and presentation of climate change science to decision-makers. For climate talks under the United Nations Framework Convention on Climate Change (UNFCCC), the IPCC's assessments are reliable sources of scientific data⁴⁹. Particularly in Earth system modeling, the high visibility of the IPCC and interest from governments funding climate science research have motivated and expedited climate science research. In addition to providing an empirical foundation to assist climate change action, the IPCC assessments also inform international discussions and the decisions made by the policy and practice communities⁵⁰. The IPCC's use of Integrated Assessment Modelling (IAM) narrows down the range of climate futures and defines the corridor for political cooperation on climate change. In the new political context of the Paris Agreement, the IPCC needs to provide policy advice to be relevant and influence policymaking.

The IPCC and climate science have developed a symbiotic connection throughout time that has accelerated and stimulated research in the area. The IPCC reports are now considered to be the definitive voice on climate change, contributing trustworthy

⁴⁷ - Michael, Grubb. (2019). United Nations Framework Convention on Climate Change. doi: 10.4324/9780429273964-7.

⁴⁸ - R., James, Ferguson. (2022). The political challenge of linking climate change and sustainable development policies: Risks and prospects. doi: 10.1017/9780511977961.028.

⁴⁹ -R., Durga. (2023). The Role of the IPCC in Climate Science. Oxford Research Encyclopedia of Climate Science, doi: 10.1093/acrefore/9780190228620.013.933.

⁵⁰- François, Hatot. (2023). Comment on essd-2023-166. doi: 10.5194/essd-2023-166-rc1.

information to international discussions⁵¹. In order to influence decision-making and climate governance, the IPCC has emerged as the principal scientific authority for the general public, politicians, and climate activists. There is an increasing clamor for action to address climate change, as seen by the trend in the IPCC reports' remarks towards greater confidence levels. As the IPCC has evolved, institutional adjustments have been implemented to overcome issues and regain authority. All things considered, the IPCC's evaluations and outreach initiatives have been significant in expanding understanding, shaping public opinion, and increasing public consciousness on climate change.

1-How does the IPCC assess the scientific evidence related to climate change and its impacts?

The IPCC uses a meticulous process of assessment and collaboration to evaluate scientific data pertaining to climate change and its effects. The IPCC assesses published articles from the global climate science community rather than doing its own scientific study⁵². Lead writers, scientists, representatives of non-governmental groups, and government officials examine the evaluations. Everyone with expertise is welcome to participate in the comprehensive, transparent, and inclusive evaluation process. Guidelines for communicating uncertainties and degrees of confidence in the scientific evidence are also offered by the IPCC. The IPCC reports' main focus is on the assessments it produces, which are regarded as the pinnacle of climate modeling. The objective is for experts in science and policy from many organizations, nations, and social groupings to come to an agreement⁵³. This procedure guarantees that the IPCC reports are reliable sources of information that accurately represent the state of science today regarding climate change.

2-The specific challenges that the Intergovernmental Panel on Climate Change (IPCC) faces in its efforts to address global climate change.

In addressing global climate change, the Intergovernmental Panel on Climate Change (IPCC) must overcome a number of obstacles⁵⁴. First off, the IPCC has come under fire for its projections of future states that, rather than truly reflecting the state of affairs politically and economically, resemble political manifestos. Second, despite a considerable body of research on the subject, the IPCC has been criticized of neglecting talks about the best objectives for reducing greenhouse gas emissions. Thirdly, the credibility of the IPCC has been weakened by its prior refusal to admit the likely failure of international climate policy discussions⁵⁵. Finally, the IPCC's capacity to evaluate past and present policy errors

⁵¹ -Tomàs, Molina., Ernest, Abadal. (2021). The Evolution of Communicating the Uncertainty of Climate Change to Policymakers: A Study of IPCC Synthesis Reports. Sustainability, doi: 10.3390/SU13052466.

⁵² - R., Durga. (2023). The Role of the IPCC in Climate Science. Oxford Research Encyclopedia of Climate Science, doi: 10.1093/acrefore/9780190228620.013.933.

⁵³ - Paul, C., Donaghy. (2022). A Critical Assessment of the Intergovernmental Panel on Climate Change. doi: 10.1017/9781009082099.

⁵⁴ - Neil, Murphy. (2023). The IPCC and the challenge of ex post policy evaluation}. doi: 10.21203/rs.3.rs-2498532/v1.

⁵⁵ - (2023). Climate Change—Does the IPCC Model Provide the Foundation for a Potential Global Technology Assessment Framework?. doi: 10.1007/978-3-031-10617-0_7.

has been hampered by its ignoring of the emerging literature on ex post climate policy review. These difficulties imply that the IPCC has difficulties in self-criticism and preserving its independence from decision-makers. Giving national authorities in charge of research and higher education power over the IPCC is one suggested remedy.

B-Kyoto Protocol and climate changes:-

An international environmental pact known as the Kyoto Protocol was created to combat climate change and reduce greenhouse gas emissions. Trade patterns, bilateral trade, and global value chains have all been impacted in different ways. In contrast to the Montreal convention, which has had the opposite impact, the convention has been found to enhance international bilateral commerce in the climate change industry⁵⁶. Contrary to the Porter Hypothesis, however, environmental stringency has had a detrimental and considerable influence on international bilateral commerce in climate-related businesses. Potential negative consequences of the Kyoto Protocol have also been linked to manufacturing relocation, which has the potential to change trade patterns and strengthen the committed nations' relative downstream positions in international value chains. Furthermore, the climate regime, which includes the Kyoto Protocol, has changed over time. The Paris Agreement, which is an alternative to the Kyoto Protocol's "top-down" strategy, represents a "bottom-up" approach⁵⁷.

1-The challenges of Kyoto Protocol and climate changes:-

Disagreements and confrontations between Canadian provinces and the federal government over the establishment of emissions trading schemes and the execution of greenhouse gas reduction objectives are among the obstacles posed by the Kyoto Protocol and climate change⁵⁸. Effective international climate policy design is also required, as are the normativity of COP/MOP decisions, the application of state responsibility for climate change, and the invocation of norms in domestic and international litigation. Due to its structural shortcomings and the way wealthy and poor nations share responsibilities for reducing emissions, the UNFCCC/Kyoto Protocol model has encountered challenges. Furthermore, the way emissions are measured has to change from being production-based to consumption-based⁵⁹. International climate accords face further difficulties due to

⁵⁶ - Reza, Najarzadeh., Hassan, Dargahi., Lotfali, Agheli., Kazem, Biabany, Khameneh. (2021). Kyoto Protocol and global value chains: Trade effects of an international environmental policy. Environmental development, doi: 10.1016/J.ENVDEV.2021.100659.

⁵⁷ - Vasil, Gechev. (2020). The Puny Success of the Kyoto Protocol. Social Science Research Network, doi: 10.2139/SSRN.3658757.

⁵⁸ - Elisabeth, DeMarco., Robert, Routliffe., Heather, Landymore. (2020). Canadian Challenges in Implementing the Kyoto Protocol: A Cause for Harmonization. Alberta law review, doi: 10.29173/ALR489.

⁵⁹ - Tobias, Persson. (2014). The challenge of finding correct measurements for mitigation of greenhouse gas emissions: A frame-critical analysis of the Kyoto protocol.

competing value systems among political constituencies and the disproportionate weight placed on industrialized nations⁶⁰ .

2-The specific challenges faced by the Kyoto Protocol in addressing climate change:-

One of the unique difficulties the Kyoto Protocol has in combating climate change is the potentially erroneous geographical approach to calculating emissions from production rather than consumption⁶¹. There have been doubts regarding the UNFCCC's efficacy as a platform for organizing a worldwide response to climate change due to the lack of progress in discussions between the parties to the convention .Concerns over competitiveness and leakage among signed wealthy country states are raised by developing countries' absence from the Kyoto Protocol's targeted emissions reduction requirements .Under World Trade Organization (WTO) regulations, attempts to advance the renewable energy sector through subsidies with local content standards have been contested⁶² . In order to solve the issues of leakage and loss of competition, it is highlighted that a new climate change treaty is required in 2015. The development of global climate policy, the normativity of COP/MOP decisions, the application of state responsibility for climate change and the invocation of its regulations in domestic and international litigation are further issues in the field of climate change regulation. Significant issues also include the influence on interprovincial and international commerce, as well as the practical difficulties of several Canadian provinces implementing carbon trading schemes.

C- The Paris Agreement and climate change:-

An international legal tool designed to combat climate change is the Paris Agreement. Its foundation is the Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC) principle, which gives member nations the freedom to choose their own emission reduction goals and initiatives. This idea, however, presents difficulties for the Agreement since it may result in non-compliance and a decrease in the level of ambition for reaching net-zero emission objectives⁶³ . Parties to the Paris Agreement are required by Article 8 to address loss and damage resulting from the effects of climate change. State responsibility may nevertheless result from breaking these commitments, even though it is not a foundation for liability or compensation. States must

⁶⁰ - Eren, Cifci., Matthew, E., Oliver. (2018). Reassessing the Links between GHG Emissions, Economic Growth, and the UNFCCC: A Difference-in-Differences Approach. Sustainability, doi: 10.3390/SU10020334.

⁶¹ - Tobias, Persson. (2014). The challenge of finding correct measurements for mitigation of greenhouse gas emissions: A frame-critical analysis of the Kyoto protocol.

⁶² - Elisabeth, DeMarco., Robert, Routliffe., Heather, Landymore. (2020). Canadian Challenges in Implementing the Kyoto Protocol: A Cause for Harmonization. Alberta law review, doi: 10.29173/ALR489.

⁶³ - The Role of the Paris Agreement in Ensuring Compliance with the CBDR-RC Principle through the Compliance Mechanism. Padjadjaran journal of international law, (2023). doi: 10.23920/pjil.v7i1.1324.

handle loss and damage by removing harm causes and taking preventative action⁶⁴. The Paris Agreement links with the work program of the Warsaw International Mechanism by recognizing the significance of preventing, mitigating, and resolving loss and damage related to climate change. In order to achieve its long-term objectives, the Agreement will need to undergo significant changes and upgrades in the energy and agriculture sectors. The Agreement also has consequences for climate justice, especially with regard to sea level rise and temperature objectives, which disproportionately burden island governments.

A-The key provisions of the Paris Agreement and how do they address climate change:

The key provisions of the Paris Agreement address climate change by recognizing the importance of averting, minimizing, and addressing loss and damage associated with the adverse effects of climate change. The agreement conveys stronger global willingness in the area of low carbon transition and sets out a clearer global vision in the area of the energy revolution. It limits global warming below 2oC and emphasizes the integration of climate change adaptation and disaster risk reduction while enhancing adaptation, mitigation, and financial prospects.⁶⁵ Countries pledge GHG mitigation goals, including near-term emissions targets for 2030, long-term net-zero emissions, and targets for methane emission reductions. The agreement represents a step change in the international community's efforts to address climate change by resolving issues related to the architecture, legal form, and differentiation among countries.

B-The major challenges faced by countries in implementing the Paris Agreement targets:-

The variety of Nationally Determined Contributions (NDCs) and the unpredictability of future mitigation efforts are the two main obstacles that nations must overcome in order to meet the objectives of the Paris Agreement⁶⁶. The covert approach to funding, mitigating, and adapting to climate change, as well as the losses and damages brought on by simultaneous calamities, provide additional difficulties⁶⁷. Furthermore, there is a discrepancy between the Paris Agreement's aim and the possible outcome of the global climate governance system, which presents difficulties like extreme pressure on carbon emissions. Moreover, integrating catastrophe risk reduction and climate change adaptation with improved mitigation, adaptation, and financial possibilities are necessary

⁶⁴ - Azam, Amini., Mohammad, Abedi., Elnaz, Nesari., Ehsan, Daryadel., Mahdi, Kolahi., Hojjat, Mianabadi., Judith, Lorraine, Fisher. (2023). The paris agreement's approach toward climate change loss and damage. *World Affairs*, doi: 10.1177/00438200221147936.

⁶⁵ - Steffen, Kallbekken. (2022). The Paris Agreement has the potential to facilitate ambitious climate action: a reply to 'Why do climate change negotiations stall? Scientific evidence and solutions for some structural problems' by Ulrich J. Frey and Jazmin Burgess. *Global Discourse*, doi: 10.1332/204378921x16627216100877.

⁶⁶ - Fakhry, Dzulfiqar, Lubis. (2022). Foreign policy on climate change under the trump's presidency: paris agreement. *Jurnal Diplomasi Pertahanan*, doi: 10.33172/jdp.v8i1.891.

⁶⁷ - Rahima, TALIBLI. (2023). Construction, Implementation and Risks of the Carbon Market Mechanisms Under the Paris Agreement. doi: 10.1007/978-981-19-7738-1_7.

for the Paris Agreement to be effective . The Paris Agreement's implementation also depends on resolving obstacles including the fossil fuel sector, conventional economic wisdom, and political interests, as well as on frequent amendments and raising the bar for mitigation targets⁶⁸ .

viii. The settlement of disputes about climate changes:-

Investor-State dispute settlement (ISDS), local courts ,, arbitration , and international judicial and quasi-judicial organizations are some of the procedures used to address conflicts pertaining to climate change. Due to its adaptability, hybridity, and arbitral rulings' enforceability, ISDS is regarded as an appropriate mechanism for enforcing international accountability for violations of climate change commitments . International accords are frequently considered by domestic courts as part of the dispute's backdrop rather than the relevant legal framework.⁶⁹ There are benefits and drawbacks to arbitration when it comes to settling conflicts pertaining to climate change, such as the involvement of third parties and how it relates to other forms of dispute settlement. Climate-related cases have been handled by international judicial and quasi-judicial organizations like the Compliance Committee, the Inter-American Commission on Human Rights, and the International Centre for Settlement of Investment Disputes; however, the results of these bodies' work have not always been favorable to climate protection⁷⁰. All things considered, the difficulties in settling disagreements about private green investment projects and climate change duties call for regime-specific dispute resolution procedures.

A- The legal frameworks in place to address disputes related to climate change:-

The 2020 Model Statute for Proceedings Challenging Government Failure to Act on Climate Change is one of the legal frameworks in place to handle issues pertaining to climate change⁷¹, along with arbitration, conciliation, and non-compliance processes. These frameworks seek to guarantee adherence to international climate change accords and hold states responsible for their treaty responsibilities. Nevertheless, although being specified in the treaties, several conflict resolution procedures, such arbitration and conciliation, have not been used ⁷². Potential remedies for procedural law change to lower obstacles to climate justice are provided by the 2020 Model Statute . Framework legislation and rights-based climate litigation are also being investigated as tactics to spark political

⁶⁸ - Filipe, Duarte, Santos., Paulo, Lopes, Ferreira., Jiesper, Strandsbjerg, Tristan, Pedersen. (2022). The Climate Change Challenge: A Review of the Barriers and Solutions to Deliver a Paris Solution. Climate, doi: 10.3390/cli10050075.

⁶⁹ - Roda, Verheyen., Cathrin, Zengerling. (2013). International Climate Change Cases. doi: 10.5771/9783845242781_759.

⁷⁰ - Lucas, Bergkamp. (2015). Adjudicating scientific disputes in climate science: the limits of judicial competence and the risks of taking sides. Social Science Research Network, doi: 10.2139/SSRN.2679252.

⁷¹ - Megan, Bowman. (2022). Turning Promises into Action: 'Legal Readiness for Climate Finance' and Implementing the Paris Agreement. Carbon and Climate Law Review, doi: 10.21552/cclr/2022/1/7.

⁷² - Marcelo, R., Sánchez-Villagra. (2023). Catalytic Climate Litigation: Rights and Statutes. Oxford Journal of Legal Studies, doi: 10.1093/ojls/ggad011.

and policy processes for more aggressive climate action. All things considered, these legal frameworks are essential for resolving conflicts and advancing climate justice.

B-The potential legal implications of climate change on international law, particularly in regards to dispute resolution mechanisms:-

Significant legal ramifications of climate change arise for international law, especially with regard to dispute settlement procedures. Holding nations responsible and guaranteeing adherence to treaty obligations depend on dispute resolution clauses⁷³. However, many of the dispute resolution procedures, including arbitration, conciliation, and non-compliance procedures, that are included in international climate change accords have not been put into practice. The Kyoto Protocol has an effective non-compliance mechanism, and the Paris Agreement is discussing a watered-down version of it. In contrast, the United Nations Framework Convention on Climate Change (UNFCCC) lacks one. Although there are obstacles in the way of attaining climate justice, international commercial arbitration is ideally adapted to address the transboundary aspect of climate change⁷⁴. Investment treaty law and the international legal framework on climate change need to be harmonized since investment treaty law and the global public interest in climate change intersect and sometimes overlap. Practitioners of international arbitration will be impacted by climate change, and they may make a practical and policy contribution to the battle against climate change.

C-The challenges of the settlement of disputes about climate changes:-

Traditional standing, justiciability, and evidentiary requirements present obstacles to the resolution of issues regarding climate change, making it difficult and sometimes costly for plaintiffs to pursue climate justice. Furthermore, the fragmented character of the harm caused by climate change is not well aligned with procedural procedures, resulting in inconsistencies in the way the issue is addressed. The absence of particular dispute resolution procedures in international legal frameworks is another difficulty and leaves loopholes in the settlement of conflicts pertaining to climate change. International dispute resolution is further complicated by the Kyoto Protocol's lack of a field-specific remedy for possible conflicts and the restricted scope for environment-based reasoning in investor-State courts. Innovative techniques are required in commercial arbitration to address these issues and supplement more established techniques of resolving disputes pertaining to climate change⁷⁵. In addition, it is imperative to modify and update global investment accords to incorporate equitable responsibilities for both investors and receiving nations, as well as to tackle climate change duties.

D-The International Court of Justice and climate change:-

⁷³ - Lucia, Bíziková. (2022). On Route to Climate Justice: The Greta Effect on International Commercial Arbitration. *Journal of International Arbitration*, doi: 10.54648/joia2022004.

⁷⁴ - Jesús, Francisco, Ramírez, Bañuelos. (2021). Climate change in international law. doi: 10.24215/2618303XE017.

⁷⁵ - Victor, Byers, Flatt., Victor, Byers, Flatt. (2016). *Unsettled: How Climate Change Challenges a Foundation of Our Legal System, and Adapting the Legal State*. Social Science Research Network, .

As it determines a state's liability for failing to meet its emission reduction requirements, the International Court of Justice (ICJ) has played a role in resolving climate change concerns⁷⁶. Both domestically and globally, the ICJ may serve as an international venue for issues pertaining to climate change. It can impose financial penalties for damages brought on by climate change and has the power to assign blame to nations that fail to reach the objectives of international agreements like the Paris Agreement. It is imperative to exercise caution when assessing the feasibility of international climate litigation, given the extremely polycentric nature of the climate crisis and the institutional constraints that international courts face when handling intricate matters of this nature⁷⁷. While international courts can deal with other environmental problems, the highly polycentric nature of climate change makes it difficult for them to effectively address the issue. Furthermore, the international legal framework on climate change is a component of investment treaty law, and it is necessary to assess its material significance in order to determine whether it applies to particular conflicts⁷⁸. Human rights and climate change are also taken into consideration, with an emphasis on substantive, procedural, and participation rights in climate change governance. The law pertaining to investment treaties incorporates the advancement of the global climate interest, offering a comprehensive resolution to the conflict between the interests of parties involved in investment treaty disputes and the worldwide public interest in combating climate change. There are two drawbacks and restrictions when utilizing the ICJ as a dispute resolution mechanism for issues pertaining to climate change. Firstly, the climate problem is very polycentric, making it challenging for international tribunals to properly handle. Second, international courts' institutional constraints make it difficult for them to handle cases involving such complicated concerns. Due to the polycentric character of the climate challenge, these limits result from the necessity of balancing the interests of the parties concerned. Furthermore, barriers to obtaining climate justice include traditional standing, justiciability, and evidentiary standards, which result in the procedurally sound dismissal of numerous claims⁷⁹. Nevertheless, prospective remedies for the change of procedural law, Effective solutions to lower these obstacles include the 2020 Model Statute for Proceedings Challenging Government Failure to Act on Climate Change, which was created by the International Bar Association. In order to objectively examine a state's climate policy, future legislative advances may concentrate on establishing minimal evaluation standards based on the Paris Agreement, due diligence guidelines, and global scientific consensus.

⁷⁶ - Kalimantan, Selatan. (2023). The Inter-American Court's Environment and Human Rights Advisory Opinion: Implications for International Climate Law. doi: 10.32920/22229584.

⁷⁷ - Marjan, Peeters. (2021). Climate Science in the Courts. doi: 10.1007/978-3-030-54367-9_7.

⁷⁸ - Eliza, Beal. (2022). Iura Novit Arbiter and the Application of the Climate Change International Legal Framework to Investment Treaty Disputes. doi: 10.1007/978-3-031-18655-4_2.

⁷⁹ - (2022). Transparency in international arbitration as a catalyst to combat climate change: is it time to embrace democratised access to data in climate change related disputes?. doi: 10.4337/9781803920047.00027.

E-European Court of Human Rights and Climate Change:-

The European Court of Human Rights has been considering cases related to climate change, with a focus on the insufficiency of state actions in combating climate change⁸⁰. These examples show the various strategies adopted by nations like Germany, Norway, and the Netherlands. It is not only feasible but also desirable for the European Court of Human Rights to investigate climate change as a human rights problem, as it may identify potential damages and address the ban on torture and cruel treatment⁸¹. The future of climate change litigation before the European Court of Human Rights will be influenced by international elements, including jurisdictional concerns, the significance of climate change treaties, causality, imminence, and the obligation to protect. Rights-based climate lawsuits brought at the European Court of Human Rights have comparatively better chances of success, even if pursuing climate change-related claims before the Court of Justice of the European Union has proven challenging⁸². Human rights legislation can be used to address the consequences of climate change, even if the European Court of Human Rights has not yet issued a ruling on the subject.

Climate change is a topic that the European Court of Human Rights (ECTHR) has addressed in rulings and decisions⁸³. The court has evaluated significant concerns pertaining to petitions that highlight governments' inadequate efforts to combat climate change. It has taken into account the rights that may be invoked in situations pertaining to climate change as well as potential claims of collective causation. The criteria for victimization and the causal relationship between harm and greenhouse gas emissions have also been investigated by the ECTHR. In addition, the court evaluated the extraterritorial nature of climate change-related duties and deliberated about potential decisions in climate change-related cases. The failure of governments to implement adaptation and mitigation programs is likely to be deemed a breach of human rights under the ECTHR, but figuring out what remedies are owed to the applicants would be more challenging.

When it comes to resolving cases involving climate change, the European Court of Human Rights (ECTHR) confronts several obstacles. The Court's remedial practice, which is

⁸⁰ -Donatas, Murauskas. (2023). Climate Change and Human Rights: the First Cases Before the European Court of Human Rights. *Teisė*, doi: 10.15388/teise.2023.126.3.

⁸¹ -Gülçin, KAZAZ. (2022). The future of environmental cases in the European Court of Human Rights: extraterritoriality, victim status, treaty interpretation, attribution, imminence and 'due diligence' in climate change cases. doi: 10.4337/9781802204292.00010.

⁸² -Afra, Sturm., Lucas, Villela, Cassini. (2023). Allocation of Institutional Responsibility for Climate Change Mitigation: Judicial Application of Constitutional Environmental Provisions in the European Climate Cases *Arctic Oil*, *Neubauer*, and *l’Affaire du siècle*. *Journal of Environmental Law*, doi: 10.1093/jel/eqac024.

⁸³ -Donatas, Murauskas. (2023). Climate Change and Human Rights: the First Cases Before the European Court of Human Rights. *Teisė*, doi: 10.15388/teise.2023.126.3.

frequently lenient, erratic, and irrational, has to be reformed . The Court's involvement with systemic concerns and politically and technically complex climate change-related issues presents another difficulty⁸⁴. The Court's methodology for reconciling conflicting interests and determining the suitable degree of examination also influences how it will react to climate-related allegations. The Court must also negotiate its own subsidiarity to state decision-making and help to come up with a *modus vivendi* that guarantees a future that can be lived in. These challenges highlight the urgent need for the ECtHR to address the type and degree of redress it can offer in climate cases and to adapt its approach to remedies, admissibility, and substantive perspectives⁸⁵.

⁸⁴ -Damte, Adugna. (2022). Rendering International Human Rights Law Fit for Purpose on Climate Change. *Human Rights Law Review*, doi: 10.1093/hrlr/ngac034.

Conclusion and Recommendation :-

In this research paper, I tried to shed light on a phenomenon that scientists and jurists consider to be one of the most important phenomena that has imposed itself on the entire world in general, and the international community in particular, which is the phenomenon of climate change, and where climate change affects basic human rights, especially in conflict areas, Its foundation is the right to life, food and water, and it is also an essential factor in displacement in search of decent livelihoods. There are natural factors that also contributed to the exacerbation of this phenomenon, and thus global production of agricultural crops will be affected, famines will occur, and fish wealth will be affected by the flooding of beaches. By identifying the most important concepts that make up this phenomenon, defining it and simplifying its concept on the one hand, and on the other hand, determining the position of the agreements. International efforts to protect the environment from climate change and the challenges facing these agreements in order to implement them and the international community's commitment to them.

From this platform, the following suggestions can be made:

1. The necessity of designing an effective international climate policy, implementing state responsibility for climate change, and invoking standards in local and international lawsuits to preserve the environment.
2. Applying climate justice, eliminating structural inefficiencies, and the way rich and poor countries share responsibilities for reducing emissions.
3. Changing some provisions in international climate agreements and developing effective mechanisms in order to eliminate difficulties due to competing value systems between political circles and the disproportionate weight placed on the shoulders of industrialized countries.
4. Harmonization between investment treaty law and the international legal framework on climate change is needed because investment treaty law and the global public interest in climate change intersect and sometimes overlap. International arbitration practitioners will be affected by climate change, and may make a practical and political contribution to the battle against climate change.

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