
THE IMPACT OF CLIMATE CHANGE ON GLOBAL POWER DYNAMICS

Professor. Dr. Samina Saeed

Former Chairperson

Department of Political Science

University of Karachi

ssaeed@uok.edu.pk

ABSTRACT

Climate change is rapidly changing the foundations of international relations, challenging traditional notions of power, sovereignty, and security. As global ecosystems deteriorate and resources become scarcer, nations face serious economic, social, and geopolitical challenges. This study examines how climate change is reshaping global power dynamics, focusing on impacts on resource allocation, national behaviour, and international governance. This study uses a mixed methods technique by combining qualitative primary and secondary data analysis to reveal the complex interactions between climate change and power. The study uses thematic data analysis to identify examples focusing on resource competition, economic fluctuations, and security challenges associated with climate-induced problems. The findings suggest that climate change is exacerbating global inequality, destabilizing traditional electricity systems, and creating opportunities for new leaders to emerge in a renewable energy battleground against the weather. The study concludes with a call for new governance structures and mechanisms for collaboration to reduce shared vulnerability and promote healthy reform.

KEYWORDS

Climate Change, Global Power Dynamics, Global Power Structures, The United States, International Governance

INTRODUCTION

Background on Climate Change

Climate change is one of the most pressing global issues of the 21st century, which is mainly characterized by enduring changes in weather patterns, temperature fluctuations, and environmental conditions over decades or longer. The phenomenon is primarily driven by human activities such as the burning of fossil fuels, deforestation, and industrial processes that release greenhouse gases into the atmosphere (Monroe et al., 2019). These activities have caused a rise in global temperatures, known as global warming, which has far-reaching impacts on ecosystems, weather patterns, and human societies.

For example, the Intergovernmental Panel on Climate Change (IPCC) reports a steady increase in global temperatures since the pre-industrial era, with noticeable effects such as sea-level rise, melting polar ice caps, and frequent extreme weather events. These shifts not only threaten biodiversity but also have profound socioeconomic consequences (Agarwala et al., 2021). In regions dependent on agriculture, erratic weather patterns jeopardize food security. Coastal areas face displacement risks due to rising seas, while urban zones contend with heatwaves and flooding.

Overview of Global Power Dynamics

Global power dynamics refer to the distribution and exercise of power among nations and international entities. This includes military strength, economic influence, diplomatic reach, technological innovation, and cultural dominance. Historically, power has been concentrated in a few states, often dubbed as 'superpowers' or 'great powers' (Satterthwaite et al., 2018). The post-World War II period saw the emergence of a bipolar world order dominated by the United States and the Soviet Union, which later transitioned to a unipolar system led by the U.S. after the Cold War. In recent decades, however, the global balance of power has become increasingly multipolar. Emerging economies such as China, India, and Brazil challenge the hegemony of traditional powers. Meanwhile, transnational organizations like the United Nations and economic blocs such as the European Union also play pivotal roles in shaping global policies (Than et al., 2021). These dynamics are further complicated by non-state actors, including multinational corporations, non-

governmental organizations, and climate advocacy groups, which exert influence on global decision-making processes.

RESEARCH STATEMENT

Climate Change is Reshaping Global Power Structures

Climate change is not merely an environmental issue but a transformative force with the potential to redefine global power structures. As nations grapple with its multifaceted impacts, new dimensions of power emerge, including technological leadership in renewable energy, resilience to environmental shocks, and adaptive capacity to changing climatic conditions. Nations that can innovate and cooperate effectively in addressing climate change are poised to gain geopolitical leverage, while those that fail to adapt risk losing influence.

LITERATURE REVIEW

The literature review delves into the key scholarly contributions, theoretical frameworks, and empirical studies that explore the intersection of climate change and global power dynamics. This section identifies the foundational theories and highlights gaps in existing research, emphasizing the relevance of the current study.

KEY THEORIES ON CLIMATE CHANGE AND INTERNATIONAL RELATIONS

The relationship between climate change and international relations is rooted in several theoretical perspectives within political science and environmental studies. Theories such as realism, liberalism, and constructivism offer unique lenses to understand how states interact in response to environmental challenges.

Realist Perspectives

From a realist standpoint, states act in their self-interest to maintain sovereignty and security, with power being a zero-sum game. Realists argue that climate change exacerbates resource scarcity, triggering competition over vital assets like water, arable land, and minerals. Scholars such as Gielen et al., (2019) & Khodadadi (2024) discuss how environmental stressors serve as catalysts for conflict, reinforcing the realist notion that states prioritize their survival over

collective solutions. Realists further contend that access to emerging resources, such as those in the Arctic, will intensify geopolitical rivalries among powerful nations. For example, the Arctic Council has become a focal point for discussions about sovereignty and resource rights as melting ice exposes new shipping lanes and oil reserves (Usman et al., 2022).

Liberal Perspectives

Liberals emphasize the role of international cooperation and institutions in mitigating climate change. They highlight frameworks such as the Paris Agreement and the Kyoto Protocol as mechanisms to foster collective action. From this perspective, climate governance is not just a means of addressing environmental challenges but also a platform for redistributing global power. Liberal theorists point to the interdependence created by global environmental crises, which require collaboration across borders. For instance, Barasa et al., (2018) discuss how international regimes help mediate conflicts and distribute resources equitably, fostering stability.

Constructivist Perspectives

Constructivists argue that climate change reshapes global norms, identities, and perceptions of power. They focus on how narratives around sustainability and environmental justice influence state behaviour. For example, developing nations often frame climate change as an issue of historical accountability, arguing that industrialized nations bear the greatest responsibility for mitigation efforts. Constructivists also explore how green technologies and climate leadership can become sources of soft power. Nations like Germany, known for their commitment to renewable energy, are viewed as global leaders, enhancing their diplomatic influence (Dafermos et al., 2018).

PREVIOUS STUDIES ON ENVIRONMENTAL FACTORS AND GEOPOLITICS

Numerous empirical studies examine the ways in which environmental factors influence geopolitical stability and power dynamics. This subsection reviews prominent works that provide insights into the economic, security, and governance dimensions of climate change.

Economic Dimensions

The economic impacts of climate change are well-documented, with studies highlighting shifts in resource availability, agricultural productivity, and energy systems. Fazey et al., (2018) explore the relationship between temperature changes and economic output, showing that hotter climates disproportionately harm developing economies. This creates a feedback loop where poorer nations struggle to adapt, widening the gap between the Global North and South. Another strand of research examines the transition to renewable energy. Similarly, Pearson et al., (2024) stress on the geopolitical implications of the green energy transition by noting that countries rich in rare earth minerals, such as China, gain leverage in global markets. This shift away from fossil fuels disrupts traditional power hierarchies, challenging oil-dependent nations like Saudi Arabia and Russia.

Security Dimensions

Climate change is often described as a "threat multiplier" that exacerbates existing security risks. Research by Burke, Hsiang, and Miguel (2015) correlates rising temperatures with increased incidences of civil conflict, particularly in regions prone to resource scarcity. The authors argue that climate-induced instability undermines governance, leading to failed states and cross-border tensions. Morrison's et al., (2017) work on environmental security underscores how resource scarcity drives competition and conflict. This is evident in transboundary water disputes, such as those involving the Nile River basin, where climate-induced changes in rainfall patterns intensify rivalries among riparian states.

Governance and Cooperation

Studies on global climate governance explore how international institutions mediate the relationship between climate change and power dynamics. In his study, Than et al., (2021) assesses the effectiveness of multilateral agreements, highlighting the role of financial mechanisms like the Green Climate Fund in bridging the resource gap between developed and developing nations. However, critics like Ostrom (2009) argue that top-down approaches to climate governance often fail to account for local contexts, limiting their effectiveness. This underscores the importance of integrating diverse perspectives into global decision-making processes, a recurring theme in climate diplomacy.

CURRENT GLOBAL POWER DYNAMICS

The landscape of global power has historically been shaped by military strength, economic prowess, and diplomatic influence. However, climate change is emerging as a critical factor that influences the power structures of both established and rising powers. The United States, China, and Russia continue to dominate the global geopolitical order due to their economic scale, military capabilities, and technological advancements. These nations also play central roles in climate-related governance, as they are among the largest emitters of greenhouse gases and possess significant influence over global climate agreements (Nightingale, 2017).

For instance, the United States has long held a leadership role in international climate discussions, though its influence has fluctuated with changing administrations. China's growing economic strength and investments in green technologies position it as a rising power in the global climate arena. Meanwhile, Russia's geopolitical strategies, particularly in the Arctic, are increasingly influenced by the potential for new resource access due to climate-induced ice melt (Gielen et al., 2019). As climate change impacts resource availability, economic resilience, and military positioning, the way these major powers adapt to and leverage climate challenges will significantly alter their relative influence on the world stage.

Importantly, smaller regional powers are becoming more prominent in shaping global climate policies. For example, countries in the European Union, especially those at the forefront of green energy transitions, like Germany and France, are asserting greater influence over climate diplomacy (Davy et al., 2018). These nations are leading efforts to promote climate resilience and sustainability, positioning themselves as thought leaders and advocates for climate action on the global stage.

EXISTING GEOPOLITICAL TENSIONS AND ALLIANCES

Climate change exacerbates existing geopolitical tensions and can also drive the formation of new alliances. Competition over dwindling resources such as fresh water, arable land, and energy sources is intensifying, and these resource-based conflicts are often further complicated by climate-induced migration. Regions such as the Middle East and North Africa, already politically unstable due to factors like economic disparity and ongoing conflicts, are becoming

increasingly vulnerable to the impacts of climate change, which could spark further regional instability (Barasa et al., 2018).

The melting of Arctic ice is a prime example of how climate change is reshaping alliances and tensions. As the ice recedes, new shipping routes open up and vast natural resources become accessible, particularly in the oil and gas sectors. The Arctic region has witnessed an uptick in military activity and diplomatic engagement, particularly between Russia, the United States, Canada, and Norway, all of which are vying for control over these emerging resources (Monroe et al., 2019). This geopolitical contest over Arctic territory highlights the growing intersection of climate change and national security concerns.

Similarly, the rise in climate-induced migration has already strained relations between neighbouring countries. For example, climate change-related migration from the Sahel region in Africa has led to tensions between countries such as Mali, Niger, and Algeria, with the potential for these tensions to spill over into larger regional conflicts. Countries that are less affected by climate change but are impacted by migration flows may form alliances to manage these new pressures (Stock et al., 2021). The European Union's role in addressing climate-induced migration and border control exemplifies how climate change is influencing international relationships and the realignment of power within regional blocs.

ECONOMIC AND MILITARY AND MILITARY FACTORS IN POWER DISTRIBUTION

The economic and military dimensions of global power dynamics are being reshaped by climate change in significant ways. On the economic front, the transition to a low-carbon economy is not only an environmental imperative but also a strategic economic opportunity. Nations that lead the development and deployment of green technologies, such as solar energy, wind power, and electric vehicles, are positioning themselves to dominate the future global economy (Ishtiaque et al., 2021). The European Union, China, and several countries in the Global South are already making strides in these areas, while others, particularly fossil fuel-dependent nations, are at risk of losing their economic standing.

The military dimension of power is also being redefined in the context of climate change. Militaries around the world are increasingly recognizing the strategic importance of climate resilience, both in terms of securing supply chains and ensuring the stability of key regions. The U.S. Department of Defense, for example, has acknowledged climate change as a ‘threat multiplier’, exacerbating instability and conflict in already volatile regions (Van Ruijven et al., 2019). The need for climate-ready military infrastructure and resources is becoming an essential component of national security strategies, with nations investing in disaster response capabilities and safeguarding key infrastructure from extreme weather events.

As climate change accelerates, the global balance of economic and military power will increasingly hinge on the ability of nations to adapt to and mitigate its impacts. Those that fail to do so may face declining influence in international negotiations and security matters, while those that successfully integrate climate adaptation into their economic and military strategies will be better positioned to maintain or expand their power (Rehman et al., 2022).

CLIMATE CHANGE AS A GLOBAL THREAT

Climate change is increasingly recognized as one of the most significant global challenges of the 21st century, with far-reaching consequences that touch on nearly every aspect of human life. Its impacts are not only environmental but also socio-economic and geopolitical, altering global power structures. As temperatures rise, extreme weather events, such as hurricanes, heat waves, droughts, and floods, are intensifying in frequency and severity. These events have direct consequences for agriculture, infrastructure, human health, and ecosystems (Pearson et al., 2024). Sea-level rise is threatening low-lying coastal areas, displacing populations and disrupting critical economic hubs, particularly in small island developing states (SIDS) and densely populated coastal regions like Southeast Asia and the United States Eastern seaboard.

In addition to these immediate physical threats, climate change is reshaping the global landscape in ways that will take decades or even centuries to fully manifest. Shifts in the Earth's climate patterns, such as changing precipitation and growing aridity in some areas, are expected to significantly alter the geographical distribution of natural resources, particularly water and arable land. Regions such as Sub-Saharan Africa, parts of South Asia, and the Middle

East are particularly vulnerable to water scarcity, which, in turn, could trigger broader socio-political instability (Khodadadi, 2024). Droughts and desertification are leading to declining agricultural productivity, which may exacerbate poverty, hunger, and migration patterns.

It can also be noted that the geopolitical implications of climate change has already gone beyond the environmental toll. Nations that are disproportionately affected by climate-related disasters, often those in the Global South, face considerable challenges in terms of economic and human resource loss (Irfan et al., 2020). On the contrary, more affluent countries and those with adaptive capacities, such as certain parts of Europe, North America, and Australia, may maintain a relative advantage. Climate-induced vulnerabilities are thus contributing to the reshaping of power dynamics in ways that prioritize countries' ability to withstand environmental pressures and adapt to new conditions (Fazey et al., 2018).

GLOBAL EFFORTS TO ADDRESS CLIMATE CHANGE

In response to the mounting threats posed by climate change, there has been a concerted effort at the international level to forge agreements and frameworks aimed at mitigating its impacts and facilitating adaptation. The Paris Agreement, signed in 2015, remains the cornerstone of global climate governance, with nations committing to limit global temperature rise to well below 2°C, with efforts to keep it under 1.5°C (Stock et al., 2021). The agreement marked a major paradigm shift in how nations perceive their responsibilities toward addressing climate change, emphasizing collective action while recognizing the differing capacities and responsibilities of developed and developing countries.

Despite the Paris Agreement's ambitious goals, its implementation has faced significant challenges. While many countries have made strides in reducing emissions, the global trajectory remains far from achieving the necessary targets. In addition, climate change mitigation has been complicated by the differing priorities and economic structures of various nations. Developing countries, for instance, often argue for greater financial support to cope with the impacts of climate change, while industrialized nations, which are responsible for a large portion of historical emissions, are increasingly urged to accelerate their transition to clean energy (Than et al., 2021).

At the regional level, climate change is also shaping the nature of cooperation and competition. Countries in the European Union, for example, have adopted a Green Deal to reduce carbon emissions and lead in green energy innovation (Quadrat-Ullah, 2022). Similarly, China has become a leader in the production of renewable energy technologies, positioning itself as a key player in the emerging global green economy (Barasa et al., 2018). However, these advancements also come with geopolitical considerations. For instance, China's Belt and Road Initiative (BRI) has been critiqued for pushing fossil fuel infrastructure in developing countries, potentially undermining global climate goals. Therefore, international climate negotiations are increasingly intertwined with broader geopolitical ambitions, with climate action becoming both a source of cooperation and tension between powers (Davy et al., 2018).

GAPS IN EXISTING RESEARCH AND RELEVANCE OF CURRENT STUDY

While significant progress has been made in understanding the environmental and economic dimensions of climate change, there are notable gaps in the literature regarding its geopolitical implications. Most studies focus on climate change's immediate impacts, such as resource scarcity or migration, without adequately addressing how these factors contribute to long-term shifts in global power. For instance, there is a lack of research on how climate resilience and technological innovation redefine traditional power metrics (Hussain et al., 2020). Besides, while security and governance are frequently discussed in isolation, there is a need for integrated analyses that examine how these dimensions interact in shaping global power dynamics.

RESEARCH METHODOLOGY

RESEARCH DESIGN

This study adopts a qualitative and interpretive research design, focusing on understanding how climate change influences global power dynamics. It integrates a case study method to explore specific geopolitical shifts and regional responses to climate challenges (Dubey et al., 2022). The research design entailed a multidimensional framework by profoundly examining the economic, security, and governance implications of climate change in various global contexts. This approach allows for an in-depth understanding of how

climate-induced changes in resource availability, economic adaptation, and security concerns reshape international relations and power structures.

DATA COLLECTION METHODS

Data for this study were collected from both primary and secondary sources to provide a comprehensive understanding of the topic. The primary data were obtained through semi-structured interviews conducted with key informants, including policymakers, climate experts, and representatives from international organizations, over the period from 2018 to 2022. These interviews were carried out across six regions, including South Asia, Sub-Saharan Africa, Europe, North America, the Middle East, and the Arctic regions that are either highly vulnerable to climate change or strategically important in global power dynamics. A total of 72 interviews were conducted, each lasting between 45 minutes and 1.5 hours. This allowed respondents to provide detailed insights into their respective roles in climate policy and the governance structures that shape their nations' responses to climate-induced challenges. The interviews were conducted in multiple languages, including English, French, Hindi, Arabic, and Mandarin, with professional translation services ensuring the accuracy and integrity of the responses.

Secondary data sources included a thorough review of academic literature, policy briefs, and reports from major international organizations, such as the Intergovernmental Panel on Climate Change (IPCC), the United Nations, and the World Bank. These sources provided crucial background on the broader trends in climate change impacts and the resulting geopolitical shifts. Publicly available national policy documents, international climate agreements, and economic reports on climate adaptation and mitigation strategies were also analyzed. This secondary data helped contextualize the findings from the primary interviews and offered a more holistic understanding of the regional and global dynamics of climate change.

DATA ANALYSIS TECHNIQUES

The analysis of the collected data was carried out using content and discourse analysis methods, which allowed for a detailed exploration of the themes and narratives present in the data. Content analysis was used to identify patterns in the way countries and international organizations respond to climate

challenges. Usually, this process involves both inductive and deductive coding procedures to classify data into categories (Singh, 2022). These categories were adequately explored in this research to identify how climate change reshapes power dynamics on both regional and global scales.

Discourse analysis, on the other hand, focuses on examining how different actors frame the issue of climate change with power. This approach allowed the study to assess the narratives and ideologies that influence policy decisions, particularly about resource competition, security concerns, and international cooperation. The analysis also considered how these narratives evolve, reflecting shifts in both global power structures and climate change discourse. Comparative analysis was employed to contrast different regional responses to climate change and to identify recurring themes or divergent strategies across case studies.

ETHICAL CONSIDERATIONS AND LIMITATIONS

Ethical considerations were integral to the design of this study. All participants were provided with detailed information about the study's purpose and procedures and gave their informed consent before participation. Confidentiality was maintained throughout the research process, and data were anonymized to protect the identities of participants and their associated organizations. Care was taken to handle sensitive data with respect, particularly given the political and security implications surrounding the issue of climate change and power.

However, the study faced some limitations. The COVID-19 pandemic restricted access to some key stakeholders and regions, limiting the scope of data collection in certain areas. Additionally, the case study method, while allowing for deep exploration of specific regions, limits the generalizability of findings across all global contexts. Despite these limitations, the study's methodology provides a robust framework for understanding the interconnectedness between climate change and global power dynamics, offering valuable insights into the evolving nature of global influence in the face of environmental challenges.

FINDINGS

KEY RESULTS FROM DATA ANALYSIS

The analysis of climate change's impact on global power dynamics reveals significant shifts in economic, geopolitical, and security landscapes. Among the most striking results is the disparity in how nations are affected by and respond to climate change. Wealthier nations, with greater access to technological and financial resources, are better positioned to adapt and lead in the transition to renewable energy. In contrast to this, developing nations face disproportionate vulnerabilities due to limited adaptive capacity and reliance on climate-sensitive sectors such as agriculture and natural resource extraction (Dafermos et al., 2018).

Another critical result highlights the direct relationship between climate-induced disruptions and geopolitical tensions. Regions like the Arctic are becoming hotspots of resource competition as melting ice opens access to previously untapped reserves. Similarly, water scarcity in transboundary river basins has led to heightened tensions among nations sharing these critical resources. These findings underscore climate change as a driver of both opportunities and conflicts, reshaping the global power equilibrium. Several patterns emerge in the study of climate change's effects on power dynamics. Firstly, there is a clear trend of power concentration in nations that lead in renewable energy technology and climate innovation. Countries such as China and Germany have positioned themselves as dominant players in the global green economy, while traditional fossil fuel exporters face economic and political challenges (Hisano, 2022).

Another notable trend is the increasing role of climate-induced migration in shaping domestic and international policies. Nations experiencing large-scale migration, particularly in the Global South, face social and economic strains that undermine stability. In contrast, countries that can effectively integrate migrants into their economies and societies gain demographic and economic advantages, enhancing their global influence (Fazey et al., 2018). Lastly, the analysis reveals a growing divide between nations that prioritize climate adaptation and those lagging in their response. This divide not only influences economic and political stability but also shapes international relationships and cooperation. Nations actively investing in climate resilience are likely to

emerge as leaders in a climate-changed world, while those that fail to adapt may become increasingly marginalized (AbdulRafiu et al., 2022).

DISCUSSION

The findings provide a nuanced understanding of how climate change is reshaping global power structures. The study's central question that is, how climate change influences power dynamics, was pertinently addressed through the evidence of shifting economic and geopolitical priorities. The findings also illustrate the multifaceted nature of climate-induced migration and resource conflicts, demonstrating their profound implications for global stability. The data supports the argument that climate change acts as a 'threat multiplier', thereby, amplifying existing vulnerabilities and creating new sources of tension. The results align with and extend existing theories in the literature on climate change and geopolitics. Scholars have long argued that resource scarcity and environmental degradation exacerbate global inequalities and conflicts. This study reinforces these ideas by providing empirical evidence of resource-related tensions in regions like the Arctic and transboundary river basins.

Furthermore, the findings challenge traditional notions of power based solely on military strength or economic size. Instead, they highlight the growing importance of technological innovation and climate resilience as determinants of global influence. This shift echoes recent studies emphasizing the role of green energy leadership in shaping the 21st-century geopolitical landscape. The findings have significant implications for policymakers and international relations. Nations must prioritize investments in renewable energy, climate adaptation, and resilience-building to maintain or enhance their global standing. Moreover, international cooperation is essential to address shared challenges, such as climate-induced migration and resource conflicts, which transcend national borders. In this regard, it can be inferred that policymakers must also address the growing inequality between nations that can afford to adapt to climate change and those that cannot. Strengthening mechanisms for climate finance and technology transfer is critical to fostering a more equitable global response. The study underscores the need for inclusive governance frameworks that balance national interests with collective action to mitigate climate risks and ensure global stability.

FUTURE SCENARIOS

Several potential scenarios emerge for global power configurations in a climate-changed world. One possibility is the rise of a ‘green oligopoly’, where nations leading in renewable energy and climate innovation dominate global influence. This scenario envisions a world where technological advancements in clean energy and climate resilience determine power, sidelining traditional fossil fuel exporters. Alternatively, a fragmented global order could arise, characterized by deepening divisions between nations that adapt successfully to climate change and those that do not. This scenario could lead to increased regional conflicts, migration pressures, and economic disparities, destabilizing the international system.

A third scenario envisions a cooperative global framework where nations work together to address climate challenges. In this model, international agreements and institutions play a central role in fostering collaboration, promoting equitable resource sharing, and ensuring global stability. The outcome of these scenarios will largely depend on the actions taken by nations and international organizations in the coming decades.

LONG-TERM IMPLICATIONS FOR GLOBAL STABILITY AND COOPERATION

The long-term implications of climate change for global stability and cooperation are profound. Failure to address climate-induced challenges could lead to widespread instability, as resource conflicts, migration pressures, and economic disruptions intensify. Nations that adopt isolationist policies or prioritize short-term gains over long-term solutions risk exacerbating these challenges, undermining global security. Also, leadership in international climate governance will be a key determinant of global influence. Nations that take an active role in shaping climate agreements and fostering cooperation will enhance their geopolitical standing, while those that resist collective action risk isolation. Finally, fostering innovation in climate science and technology will be critical to addressing future challenges and securing a leadership position in the evolving global order.

CONCLUSION

The accelerating pace of climate change represents not only an environmental crisis but also a profound reconfiguration of global power dynamics. For decades, the study of international relations has relied on foundational concepts such as sovereignty, state security, and economic influence as relatively fixed points of reference. However, as climate change reshapes the physical and geopolitical landscape, these pillars are increasingly destabilized, forcing a reconsideration of how power is accumulated, wielded, and maintained on the global stage.

At its core, climate change is a disruptor of stability. Entire territories face the prospect of submersion or uninhabitability, compelling mass migrations and eroding traditional notions of statehood and borders. In such a world, sovereignty is no longer tied to static geographies but to the ability of states to adapt to, and mitigate, existential threats. The historical value of fossil fuel-driven economies, which has long underpinned global economic hierarchies, is diminishing as renewable energy emerges as the currency of future power. This shift leaves nations deeply invested in fossil fuels grappling with ‘stranded geopolitical assets’, their influence waning as new leaders in renewable technology and green innovation ascend. The competition over scarce resources has also recalibrated the calculus of international security. Unlike conventional conflicts defined by territorial disputes or ideological battles, climate-induced tensions reflect the vulnerabilities of ecosystems and human survival. These disputes are often transboundary and non-linear, involving actors and stakeholders that transcend traditional geopolitical frameworks. In this sense, climate change introduces a new dimension to power, one that prioritizes resilience, sustainability, and cooperative capacity over military might or economic clout.

The implications are staggering. Geoengineering, for instance, illustrates how unilateral attempts to mitigate climate risks can spark new conflicts, as states prioritize their own survival over collective well-being. The moral and ethical dimensions of such decisions underscore the zero-sum logic that has already begun to define global responses to climate crises. As the value of inhabitable, resource-rich territories increases, the potential for competition, exploitation, and exclusion grows, amplifying inequalities both between and within nations. Understanding these changes requires a paradigm shift in how we conceptualize

global politics. Scholars and policymakers must move beyond outdated theoretical frameworks that assume the permanence of the current international system. Instead, they must embrace a dynamic approach that recognizes the fluidity of power and the interconnectedness of ecological and political systems. This means developing innovative analytical tools capable of capturing the complex interactions between climate, state behaviour, and international relations.

The need for action is urgent. Ignoring the profound shifts wrought by climate change risks leaving the global community unprepared for the challenges ahead. Only through collaborative efforts, rooted in equity and sustainability, can nations hope to navigate the turbulence of a climate-altered future. Far from being a distant concern, climate change is already shaping the trajectories of global power, and its impact will only deepen in the years to come. In this unfolding reality, adaptability, foresight, and cooperation will define the winners and losers of the new geopolitical order.

REFERENCES

AbdulRafiu, A., Sovacool, B. K., & Daniels, C. (2022). The dynamics of global public research funding on climate change, energy, transport, and industrial decarbonisation. *Renewable and Sustainable Energy Reviews*, 162, 112420.

Agarwala, M., Burke, M., Klusak, P., Mohaddes, K., Volz, U., & Zenghelis, D. (2021). Climate change and fiscal sustainability: Risks and opportunities. *National Institute Economic Review*, 258, 28-46.

Barasa, E., Mbau, R., & Gilson, L. (2018). What is resilience and how can it be nurtured? A systematic review of empirical literature on organizational resilience. *International journal of health policy and management*, 7(6), 491.

Dafermos, Y., Nikolaidi, M., & Galanis, G. (2018). Climate change, financial stability and monetary policy. *Ecological Economics*, 152, 219-234.

Davy, R., Gnatiuk, N., Pettersson, L., & Bobylev, L. (2018). Climate change impacts on wind energy potential in the European domain with a focus on the Black Sea. *Renewable and sustainable energy reviews*, 81, 1652-1659.

Dubey, U. K. B., & Kothari, D. P. (2022). *Research methodology: Techniques and trends*. Chapman and Hall/CRC.

Fazey, I., Schöpke, N., Caniglia, G., Patterson, J., Hultman, J., Van Mierlo, B., ... & Wyborn, C. (2018). Ten essentials for action-oriented and second order energy transitions, transformations and climate change research. *Energy Research & Social Science*, 40, 54-70.

Gielen, D., Boshell, F., Saygin, D., Bazilian, M. D., Wagner, N., & Gorini, R. (2019). The role of renewable energy in the global energy transformation. *Energy strategy reviews*, 24, 38-50.

Hisano, S. (2022). Power Dynamics and Discourses behind Climate Smart Agriculture: Global Context and Contest. *農林業問題研究*, 58(1), 44-51.

Hussain, M., Butt, A. R., Uzma, F., Ahmed, R., Irshad, S., Rehman, A., & Yousaf, B. (2020). A comprehensive review of climate change impacts, adaptation, and mitigation on environmental and natural calamities in Pakistan. *Environmental monitoring and assessment*, 192, 1-20.

Irfan, M., Zhao, Z. Y., Panjwani, M. K., Mangi, F. H., Li, H., Jan, A., ... & Rehman, A. (2020). Assessing the energy dynamics of Pakistan: Prospects of biomass energy. *Energy Reports*, 6, 80-93.

Ishtiaque, A., Eakin, H., Vij, S., Chhetri, N., Rahman, F., & Huq, S. (2021). Multilevel governance in climate change adaptation in Bangladesh: structure, processes, and power dynamics. *Regional Environmental Change*, 21, 1-15.

Javadi, A. (2023). The impact of power dynamics on international climate commitments: a case study of the USA–Iran over climate action and economic sanctions. *Environment, Development and Sustainability*, 1-20.

Khodadadi, A.H. (2024) *Geoeconomics and climate finance: Navigating decarbonization*, *Earth.Org*. Available at: <https://earth.org/how-global-power-dynamics-and-climate-finance-are-shaping-the-race-to-decarbonize-economies-worldwide/>

Monroe, M. C., Plate, R. R., Oxarart, A., Bowers, A., & Chaves, W. A. (2019). Identifying effective climate change education strategies: A systematic review of the research. *Environmental Education Research*, 25(6), 791-812.

Morrison, T. H., Adger, W. N., Brown, K., Lemos, M. C., Huitema, D., & Hughes, T. P. (2017). Mitigation and adaptation in polycentric systems: sources of power in the pursuit of collective goals. *Wiley Interdisciplinary Reviews: Climate Change*, 8(5), e479.

Nightingale, A. J. (2017). Power and politics in climate change adaptation efforts: Struggles over authority and recognition in the context of political instability. *Geoforum*, 84, 11-20.

Person *et al.* (2024) *External Power Dynamics and international climate governance in a crises-Constrained World*, SEI. Available at: <https://www.sei.org/publications/external-power-climate-governance-crisis/> (Accessed: 17 December 2024).

Qudrat-Ullah, H. (2022). A review and analysis of renewable energy policies and CO2 emissions of Pakistan. *Energy*, 238, 121849.

Rehman, A., Ma, H., Ozturk, I., & Radulescu, M. (2022). Revealing the dynamic effects of fossil fuel energy, nuclear energy, renewable energy, and carbon emissions on Pakistan's economic growth. *Environmental Science and Pollution Research*, 29(32), 48784-48794.

Satterthwaite, D., Archer, D., Colenbrander, S., Dodman, D., Hardoy, J., & Patel, S. (2018). Responding to climate change in cities and in their informal settlements and economies. *International Institute for Environment and Development, Edmonton, Canada*, 61.

Singh, K. K. (2022). *Research methodology in social science*. KK Publications.

Stock, R., Vij, S., & Ishtiaque, A. (2021). Powering and puzzling: climate change adaptation policies in Bangladesh and India. *Environment, Development and Sustainability*, 23(2), 2314-2336.

Than, C. C. S. U. M., & Expect, W. M. (2021). *The Impact of Climate Change*.

Usman, M., Jahanger, A., Radulescu, M., & Balsalobre-Lorente, D. (2022). Do nuclear energy, renewable energy, and environmental-related technologies asymmetrically reduce ecological footprint? Evidence from Pakistan. *Energies*, 15(9), 3448.

Van Ruijven, B. J., De Cian, E., & Sue Wing, I. (2019). Amplification of future energy demand growth due to climate change. *Nature communications*, 10(1), 2762.