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Climate Change's Geopolitical Implications: Conflicts, Migrations, and Resource Competition

1. Sadia Naz, Lecturer at Department of Political Science, Government College University Faisalabad, Pakistan.

Email: Sadiahussain160@yahoo.com

2. Bushra Shaukat, Lecturer at Department of Pakistan Studies, Government College University Faisalabad, Pakistan.

Email: bushrashaukat160@gmail.com

3. Farah Naz, Deputy Director Quality Enhancement Cell, Government College University, Lahore. PhD Scholar, Department of Pakistan Studies, Government College University, Faisalabad.

Email: farah.hassan@gcu.edu.pk

4. Athar Azeem, Assistant Professor at Department of Sociology, Forman Christian College University, Lahore, Pakistan.

Email: atharazeem@fccollege.edu.pk

Abstract

Climate change presents major geopolitical concerns by increasing existing conflicts and generating new dynamics in international relations. This study investigates three key aspects of these implications: disputes, migrations, and resource competition. First, it investigates how climate-induced environmental stresses, such as water shortages and extreme weather events, contribute to regional conflicts and worsen fragile political circumstances. Second, it looks at the patterns of human migration caused by climate change, such as displacement, resettlement, and cross-border migrations, as well as the implications for societal stability and international collaboration. Finally, the article examines the rising rivalry for finite resources, namely energy supplies and arable land, as well as the geopolitical techniques used by governments to gain shielded access and influence in a changing climatic scenario. By combining empirical data and theoretical frameworks, this study highlights the intricate connection between climate change and geopolitics, underscoring the need for coordinated global measures to mitigate risks and create resilience in a more united world.

Keywords: climate change, geopolitical, MENA, IPCC, Paris Agreement,

Introduction

Climate change's consequences, which are often seen from the perspective of environmental science, extend well beyond environmental and atmospheric instability. It creates serious and important geopolitical concerns. The increasing frequency and severity of climatic disasters like droughts, floods, and hurricanes, along with gradual changes like rising sea levels and shifting weather patterns, are transforming global political, social, and economic landscapes (Smirnov, 2023). The major emphasis of this research on climate change's geopolitical ramifications is the role it plays in generating wars, migrations, and resource rivalry. Understanding these characteristics allows us to more accurately predict and handle the complex interaction between climate change and global stability (Waseem, 2024).

Climate change, the interpretive challenge of the 21st century, extends beyond total environmental degradation and has profound geopolitical implications. As global temperatures rise, the climate becomes more unstable, and natural disasters intensify, countries face unprecedented disasters that reshape their political and economic landscape. This change manifests itself in ways such as conflicts over damage, large-scale migrations, and the cost of changing powers across countries (Alam, 2024).

Competition for resources is a major concern because climate change increases the scarcity of essential resources such as water, arable land, and energy. Historically rich regions are seeing their geopolitical influence shrink as they face increasing pressures from neighboring countries and global actors vying for power, such as water scarcity, leading to conflicts in rivers shared by many countries (Telford A., 2023). The eleven-state Nile basin is a prominent example of how upstream and downstream states can struggle with water allocation when drought is more severe and arable land is depleted, making it increasingly valuable, prompting nations to invest in or annex foreign territories to secure food production for their people. It is also at the center of geopolitical conflict, while changing climate policy and renewable energy investments reshape global energy markets and contracts (Allafta, 2024). In addition, climate-induced migration due to environmental degradation and natural disasters contributes to social and political unrest. Rising sea levels, desertification, and extreme weather are displacing millions of people, causing them to move out of a just, equitable, and sustainable future.

Literature Review

Since ancient times, the Mediterranean area has served as a hotspot for geopolitical strife, linking and dividing the zones of influence of key countries in Europe, Africa, and Asia. Over the last three decades, the region has seen numerous conflicts, including the Israeli-Arab-Palestinian conflict, tensions between Turkey and Greece, political instability during the Arab Spring, armed conflicts in Iraq, Libya, Syria, Yemen, and the Balkan states, terrorist acts by al-Qaeda and the Islamic State, refugee movements, and divisions between the Global North and South (Giuseppe Dentice, 2020).

The Mediterranean has security concerns such as energy, climate change, environmental degradation, resource shortages, population expansion and development, and climatic change. Climate change connects and multiplies hazards that are inextricably linked to the region's geopolitical features, such as natural catastrophes, water and food scarcity, energy transition, human migration, war, and collaboration (Scheffran, 2014).

The Mediterranean area is one of the most sensitive to climate change, with hot, dry summers and cold, wet winters. Heatwaves, severe rainfall, coastal floods, storms, and sea level rise harm millions of people and have far-reaching societal effects, including infrastructure loss, health risks, and hazards to life and livelihood. Mitigation measures balance the climate effect against the expense of coastal protection, which might amount to several percent of a country's GDP (La Jeunesse, 2016).

Human migration from Middle Eastern and North African (MENA) nations to Europe and other areas is influenced by a number of reasons, including economic disparities, poverty, and environmental and climatic change. Climate change may make water sharing and conflicts more difficult to settle. Long-term structures across the Mediterranean Sea need collaborative efforts from Europe and MENA (Marbà, 2015).

The future of the global political-territorial system is unknown, but several scenarios are being built to forecast events and assess response plans. Four current geopolitical scenarios are gaining attention: a new multi-polar world order centered on a few competing states; the solidification of a world order based on US political and ideological norms; the fragmentation of the world along civilizational lines; and the possibility of a set of political-economic blocs acting as key players in a new global order (Nicholls, 1996).

The multi-polar global order scenario foresees the growth of numerous significant nations or superpowers, while the uni-polar thesis sees geopolitics as essentially state-based. The clash of civilizations scenario implies a widening gap between cultures with distinct religious traditions and historical experiences, resulting in conflict on a more globalized globe. Interregional considers global regions to be potential significant power hubs, but establishing interregional as the basis for a new geopolitical order will be a lengthy and arduous job (Varisco, 2013).

Climate change is a major problem with far-reaching social and economic consequences, with global average surface temperatures rising by at least 0.6°C, snow and ice cover declining, sea levels rising, and the heat content and acidity of the oceans increasing as a result of human activity. Global climate models are being revised, and the potential of approaching tipping points that accelerate or worsen warming has become a major worry (Akpodiogaga-a, 2010).

Climate change is predicted to have serious economic and political consequences, with the cost of adaptation exceeding $1,240 trillion. It has implications for freshwater supply, agricultural production, coastal viability, and shipping route alterations. By 2025, 64% of the world's population will live in water-stressed basins or places with water scarcity. The increased human population and water consumption will put further strain on water supplies in drier parts of Africa, southern Asia, and the Middle East (Hitz, 2004).

Response methods such as facility development, water-pricing legislation, new technology, and educated management may be critical in reducing future political instability. Water-related concerns are an important component of the geopolitical landscape, and water is inextricably linked to other areas of human concern (Doney, 2012).

Climate change creates substantial adaptation issues for agricultural systems, with huge portions of farmland becoming unfit for cultivation or suffering decreased output. Rising temperatures are projected to lead to more severe weather events, biodiversity loss, pest and vector-borne disease outbreaks, and changes in fish stocks and aquaculture (Calzadilla, 2013).

Global sea-level rise is predicted to have a considerable influence on coastal communities as well as cause migration and shortages elsewhere. The melting of Arctic Sea ice may allow the waterways off the northern coastlines of Canada and Russia to become transportation routes for raw resources, notably oil, during the summer months (McNutt, 2013).

Theoretical Framework

Climate change is a global issue that has intensified extreme weather events, led to resource scarcity, and increased geopolitical disputes. The Intergovernmental Panel on Climate Change (IPCC) warns that human-induced pollution has intensified extreme weather events, and natural resource scarcity has resulted in competition for scarce resources, leading to conflict between governments and regions. Climate change can also displace people, leading to migration and tensions over border control, refugees, and resource allocation.

Environmental changes, such as rising sea levels and droughts, force migration, stain resources, and contribute to social tension. Social inequality caused by climate change also leads to geopolitical conflict, with vulnerable communities experiencing heightened inequalities and conditions ripe for unrest and conflict. Nations may engage in competition over strategic resources as climate-induced scarcity becomes more pronounced (Smirnov, Climate change, drought, and potential environmental migration flows under different policy scenarios, 2023). Economic, social, and governance (ESG) readiness is increasingly becoming a corporate action for organizations, driven by pressure from international organizations, government regulations, and manufacturers in global supply chains. ESG is a comprehensive framework for evaluating an organization's ethical, sustainable, and responsible practices. It encompasses environmental considerations, such as managing resource use, waste, and emissions, and social issues, such as fair labor practices, diversity, employee well-being, and community engagement (Waseem, Assessing the Geopolitical Shifts in South Asia due to Climate Change: Analyzing the Brahmaputra River Basin (2010–2020), 2024). Investing in ESG can expedite the transition to a low-carbon economy, resulting in a more sustainable economic system and lowering the risk of conflict over scarce resources. ESG has evolved into corporate social responsibility, with companies taking an active role in addressing the root cause of climate change and decreasing the risk of conflict. However, there are still numerous areas that require clarification, leading to a new study on the relationship between climate change and geopolitical conflicts, incorporating ESG into the equation to better understand its role (Ashraful Alam, 2024).

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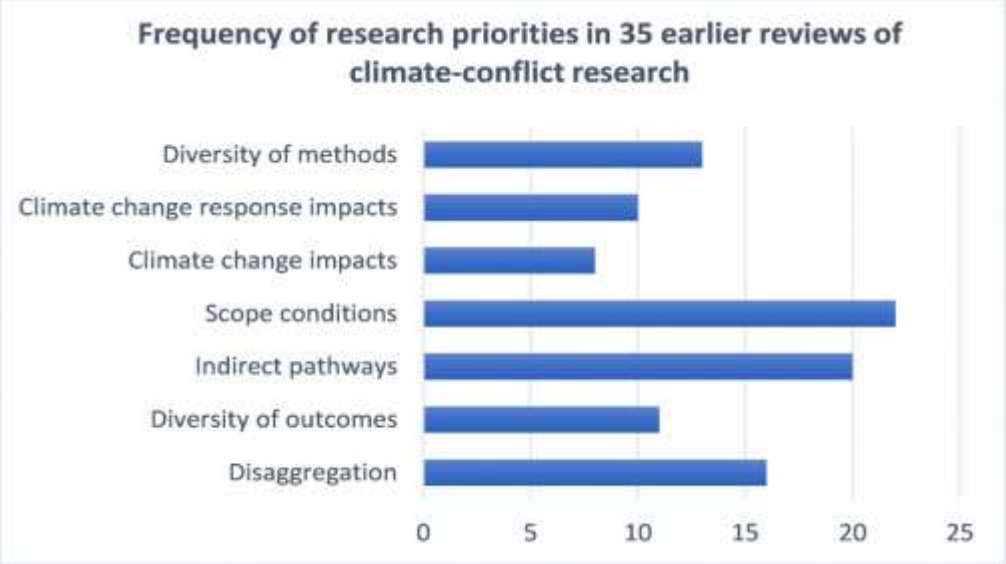
Climate-induced conflicts

Conflicts Caused by Climate, Ecological Pressure, and Political Solidarity Climate change is causing increased environmental stress, which may undermine political stability and exacerbate conflicts. This relationship is particularly obvious in areas where unstable governance and socioeconomic concerns are already prevalent. The Intergovernmental Panel on Climate Change (IPCC) describes climate change as a "threat multiplier" that exacerbates existing conflicts and vulnerabilities. The Syrian Civil War, which was largely motivated by political and societal issues but was also heavily impacted by severe droughts from 2006 to 2011, provides a clear example. These droughts damaged agricultural productivity, pushed people away from the countryside, made city living more difficult, and produced unemployment and overpopulation, all of which exacerbated social dissatisfaction and eventually led to violence (Hurrell, 1994).

Fig Climate-conflict research: A decade of scientific progress, 2021



Asset Shortage and Vicious Clash

Climate change exacerbates conflict by depleting natural resources, notably water and arable land. Desertification and variable rainfall patterns in Africa's Sahel area have increased competition for water and grazing pasture. Scarcity has exacerbated violence between agricultural and pastoralist populations, as seen in Nigeria, Mali, and Sudan. Water shortages are nevertheless a chronic cause of conflict in the Middle East. The Jordan Stream Bowl, shared by Israel, Jordan, Lebanon, and Syria, is one of the world's most water-scanning locales. Water shortages are expected to get worse as a result of climate change, which could exacerbate disputes over this already contentious resource. Similarly, as upstream water use rises in response to changing climate conditions, the Euphrates and Tigris river basins, which are essential to the livelihoods of millions in Turkey, Syria, and Iraq, become more contentious (Selby, 2014).

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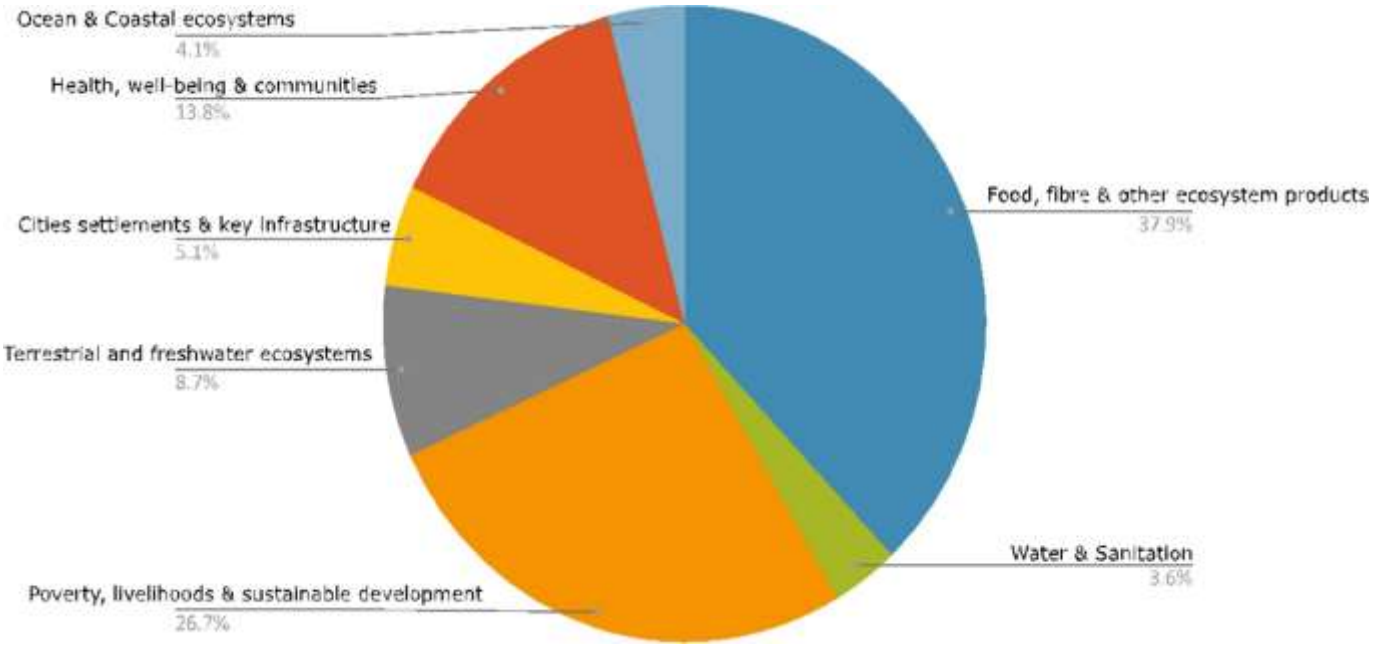
Fig. 2

From: Climate change adaptation in conflict-affected countries: A systematic assessment of evidence, 2021



Vital Interests in the Cold

The Arctic, which is warming at twice the rate of the global average, is becoming a new geopolitical frontier. Softening ice isn't just opening new oceanic courses; it is additionally uncovering huge stores of oil, gas, and minerals. State governments from both the Arctic and non-Arctic regions are paying close attention to these developments. Russia has been especially emphatic in extending its presence in the Cold War, putting resources into a military framework, and stating command over tremendous oceanic domains. Similar improvements are being made to their strategic capabilities in the Arctic by the United States, Canada, and other nations. Even though China is not a state in the Arctic, it has declared itself to be "near-arctic" and is actively looking for opportunities in the resource extraction and shipping lanes of the region. This union of interests raises the potential for international rubbing and requires strong worldwide participation to oversee contending claims and safeguard the delicate cold climate (Luedtke, 2012).

Fig: Climate change and human infectious diseases: A synthesis of research findings from global and spatio-temporal perspectives, 2024

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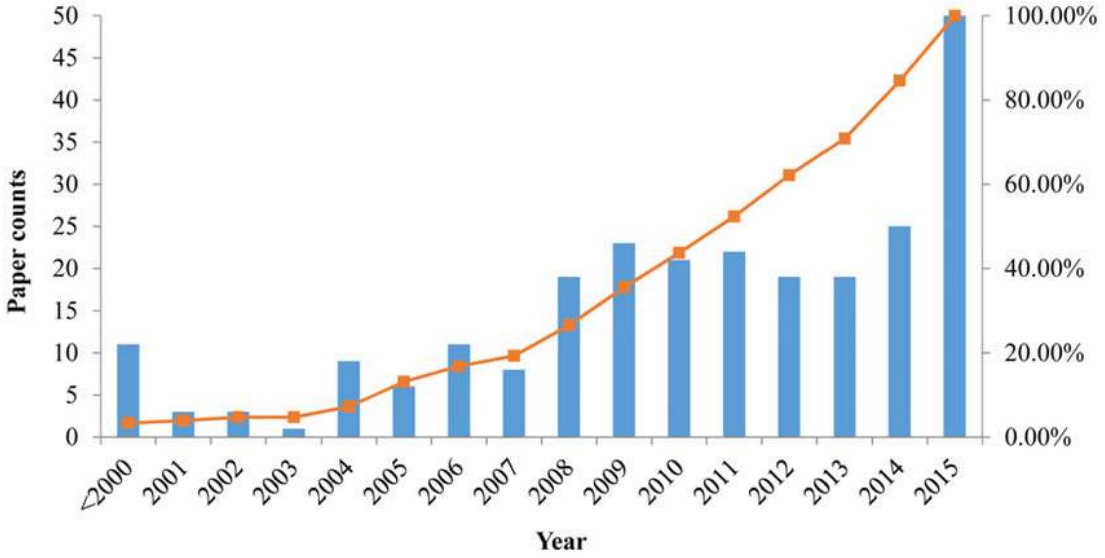
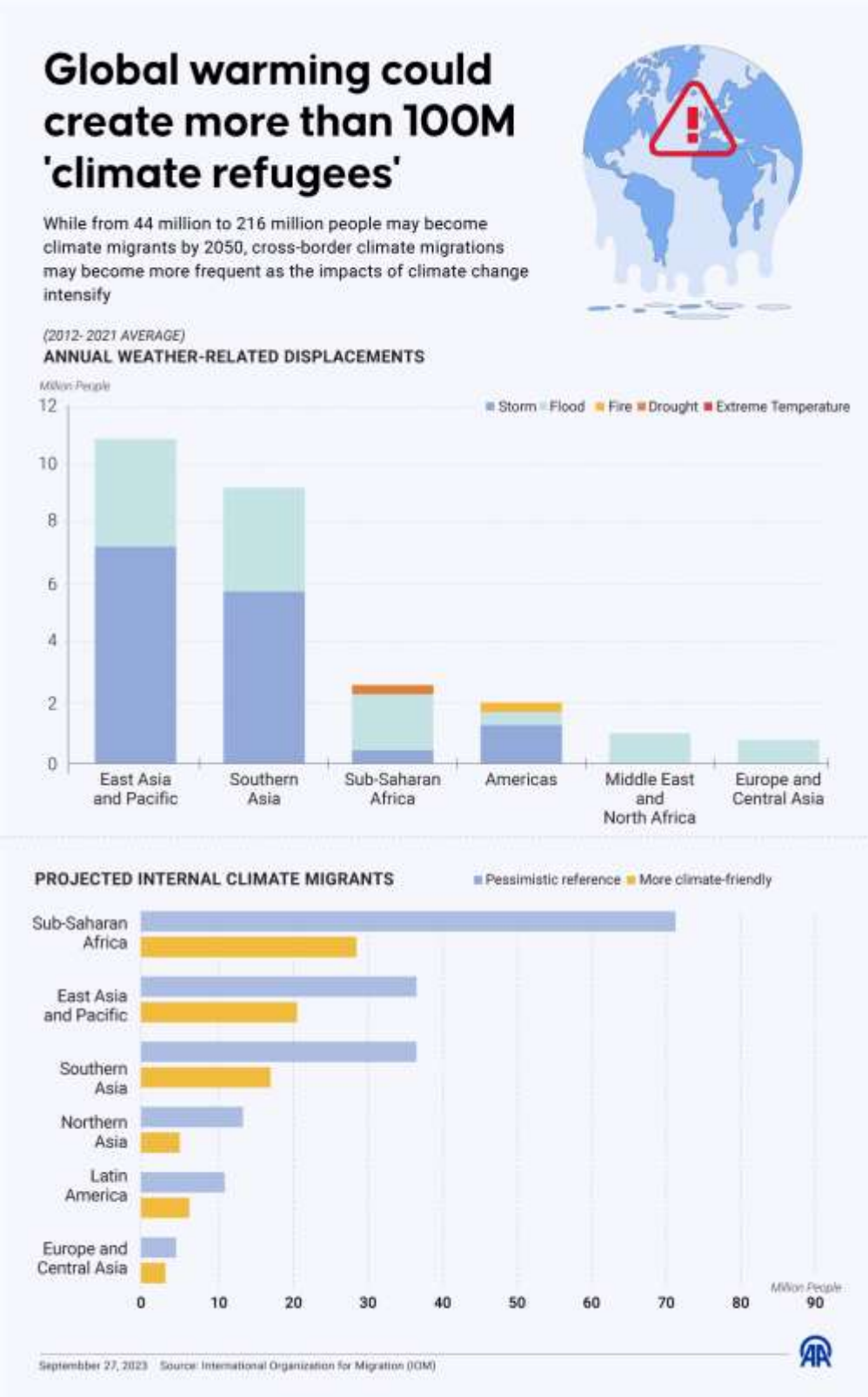


Migrations triggered by climate

Displacement Caused by Changes in the Environment Environmental change is progressively perceived as a critical driver of human relocation. People are being forced to leave their homes in search of safer and more financially viable living conditions as a result of the effects of rising sea levels, changing agricultural conditions, and extreme weather events. Particularly at risk are coastal cities and low-lying island nations. With an average elevation of just 1.5 meters above sea level, rising oceans pose existential threats to the Maldives. Furthermore, Bangladesh, with its dense population and vast low-lying areas, is subjected to frequent and severe floods, which uproot a considerable number of people each year. These internal displacements impose a burden on urban infrastructure as well as resource competitiveness, which may exacerbate social tensions (Piguet, 2011).


Global warming could create more than 100M 'climate refugees'
While from 44 million to 216 million people may become climate migrants by 2050, cross-border climate migrations may become more frequent as the impacts of climate change intensify
(2012- 2021 AVERAGE)
ANNUAL WEATHER-RELATED DISPLACEMENTS
Million People
Storm
Flood
Fire
Drought
Extreme Temperature
12
10
8
6
4
2
0
East Asia and Pacific
Southern Asia
Sub-Saharan Africa
Americas
Middle East and North Africa
Europe and Central Asia
PROJECTED INTERNAL CLIMATE MIGRANTS
Pessimistic reference
More climate-friendly
Sub-Saharan Africa
East Asia and Pacific
Southern Asia
Northern Asia
Latin America
Europe and Central Asia
0
10
20
30
40
50
60
70
80
90
Million People
September 27, 2023 Source: International Organization for Migration (IOM)

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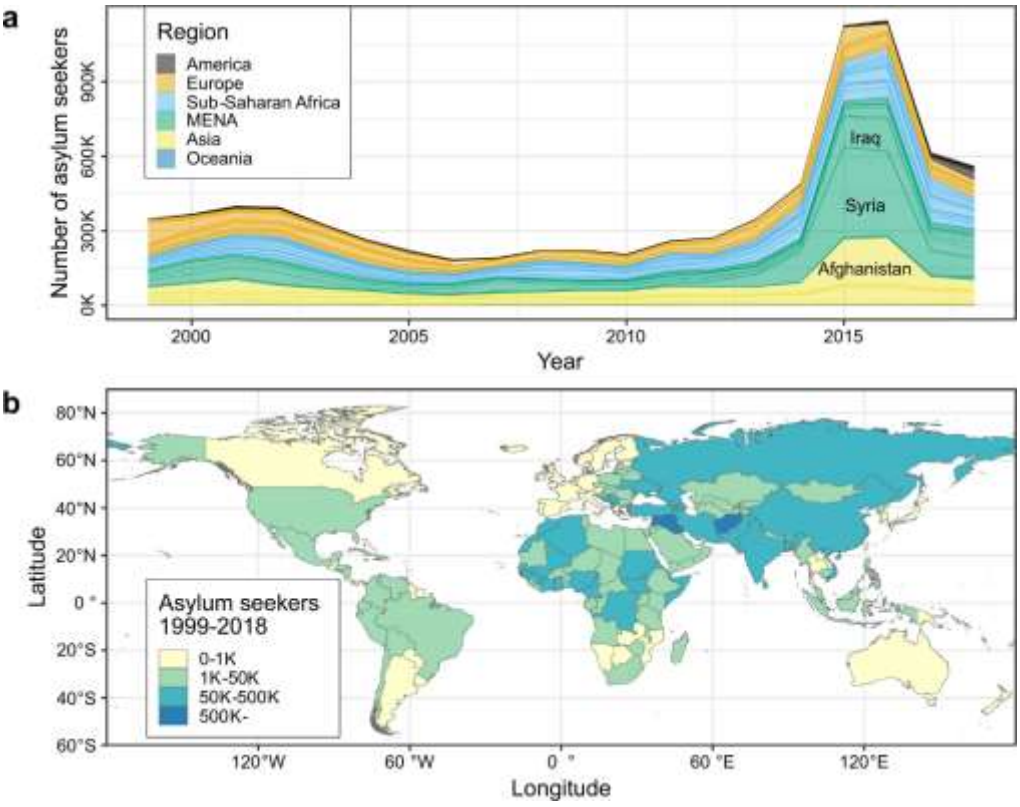
Regional stability and migration across borders

Climate refugees' cross-border movements pose serious dangers to regional stability. People are increasingly compelled to relocate to neighboring nations as the consequences of climate change render certain locations uninhabitable. This migration may put a burden on resources, disrupt local economies, and exacerbate political tensions. Millions of people are abandoning their homes in South Asia as a consequence of rising sea levels and more frequent storms, with many heading to India from Bangladesh. This migration puts an extra demand on India's already limited resources, exacerbating local socioeconomic concerns. Climate-related migrations have consequences for Europe as well. Conflict and economic hardship are the principal reasons for migration from Africa and the Middle East, but climate change exacerbates the situation. As districts in North Africa and the Middle East become progressively aloof because of outrageous intensity and water shortages, movement pressures on Europe are supposed to escalate, testing the landmass' political and social solidity (Balsari, 2020).

Fig. 1: Spatiotemporal patterns of asylum migration to the EU, 2021



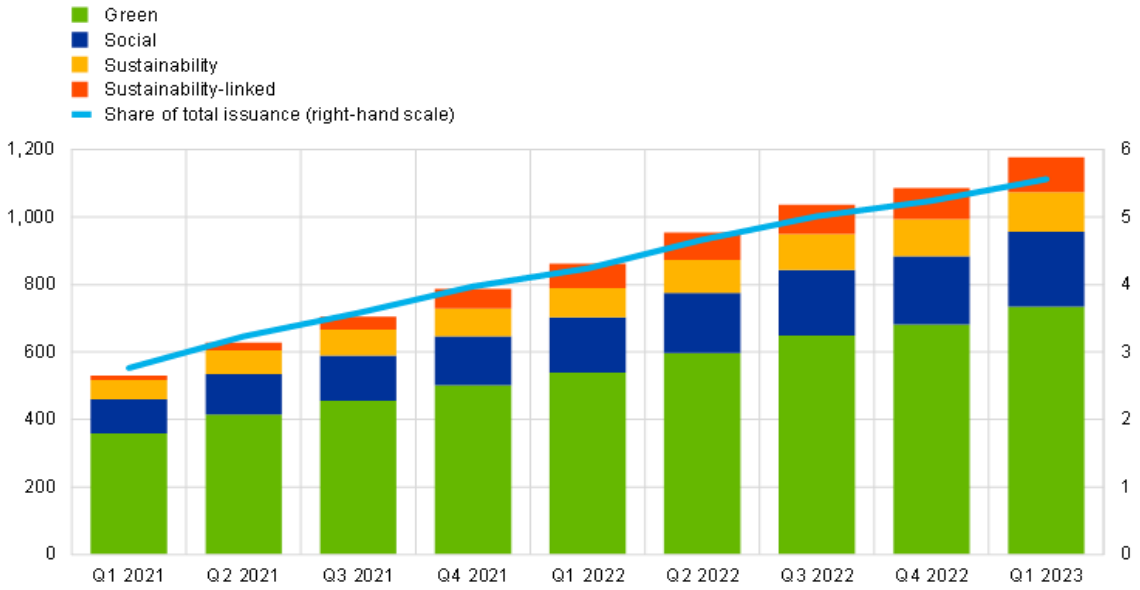
Internal Displacement and Obstacles in the City Climate-related displacement frequently causes significant internal migration within nations. In search of better opportunities, rural populations frequently relocate to urban areas after being displaced by droughts, floods, or other climatic events. Poverty, unemployment, and social unrest can all rise as a result of this rapid urbanization,

which has the potential to overwhelm city infrastructure. In sub-Saharan Africa, metropolitan focuses like Lagos, Nairobi, and Kinshasa are developing quickly, halfway because the environment has prompted rustic-to-metropolitan relocation. The rising risk of social unrest and conflict is exacerbated by these cities' inability to provide their expanding populations with sufficient housing, services, and employment opportunities (Feng, 2010).

Asset Rivalry

Water shortage and Tran boundary questions Climate change will make water scarcity one of the most pressing resource issues. Tran boundary disputes and tensions can result from competition for freshwater resources becoming scarcer. This obstacle is exemplified by the Nile River Basin. Ethiopia's development of the Fabulous Ethiopian Renaissance Dam (GERD) has started huge pressure with downstream nations Egypt and Sudan. Egypt is concerned that the dam will significantly reduce the flow of the Nile, jeopardizing its water security and agricultural productivity, despite Ethiopia's view that the dam is necessary for its development. Diplomatic efforts to settle the dispute have so far been patchy, highlighting the risk that water disputes will turn into broader regional instability (Goodman, 2022).

Fig: Economic- Bulletin, 2023

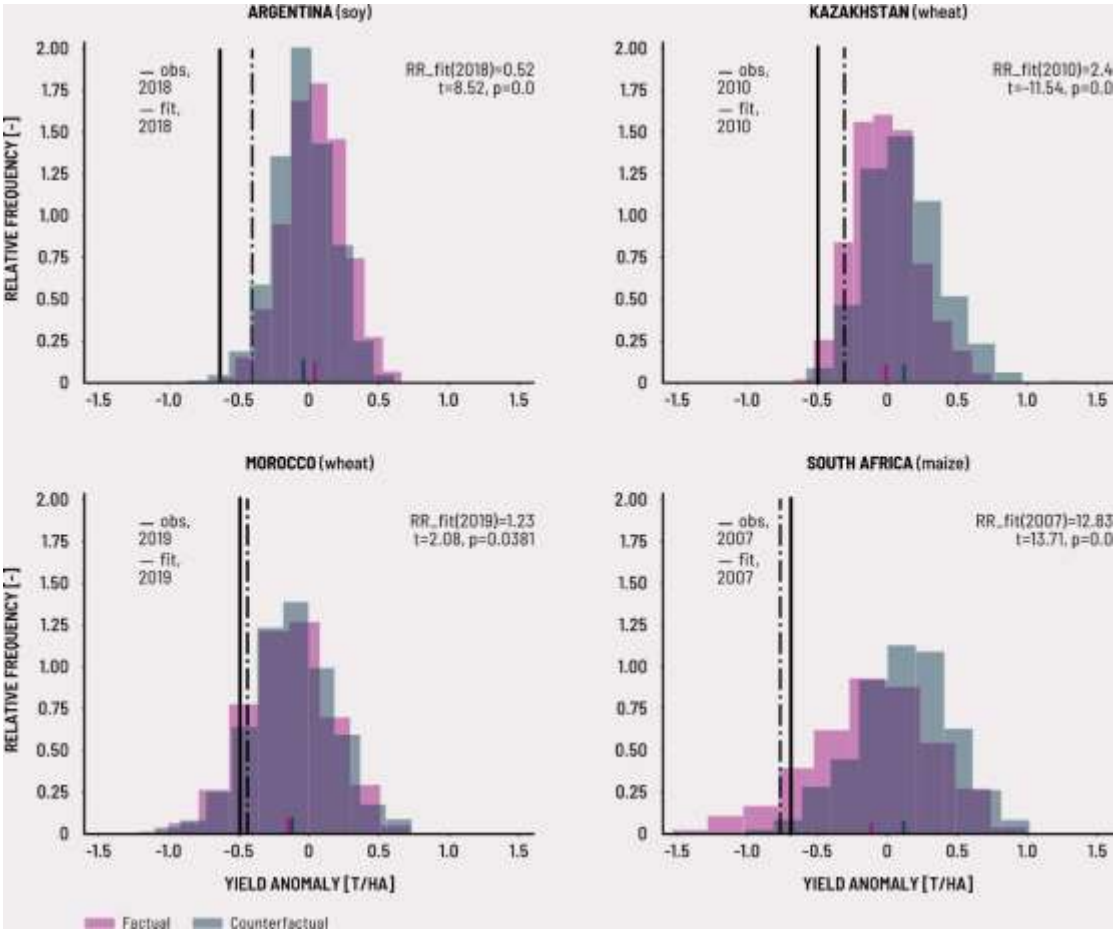


Land conflict and agricultural shifts

Changes brought about by climate change are altering agricultural zones, making areas that were once fertile less productive, and opening up new opportunities in areas that were never suitable for farming. Competition for arable land can result from these shifts, frequently at the expense of indigenous peoples and local communities. Communities in the Sahel area of Africa are being forced to travel south in search of water and fertile land as desertification continues to grow. Conflicts on the land might emerge as a consequence of this movement into regions that are already

inhabited, such as those between farmers and herders in Nigeria. Climate change is also influencing how land is utilized and who owns it across the globe. In Africa and South America, foreign investors are increasingly acquiring land as traditional agricultural regions become less profitable. Small-scale farmers may be evicted as a consequence of these "land grabs," which may affect food security in their host country (Homer-Dixon, 1991).

Figure: Estimated Influence of Climate Change on Crop Yields to Date, 2022



Energy Resources and Changes in Geopolitics

Global energy dynamics are being altered by the need to transition to renewable energy to tackle climate change. New dependencies on key minerals like lithium, cobalt, and rare earth elements, which are required for renewable technologies, are being formed as a consequence of this change. In the global energy revolution, China, a major producer of rare earth materials, is acquiring strategic power. In a similar vein, nations like the Democratic Republic of the Congo, which is home to a lot of cobalt and has a lot of it, are becoming more and more essential in the supply chains for batteries and other renewable technology. Geopolitical power balances are being changed by these shifts, which might result in new kinds of resource rivalry and reliance (Bošnjaković, 2012).

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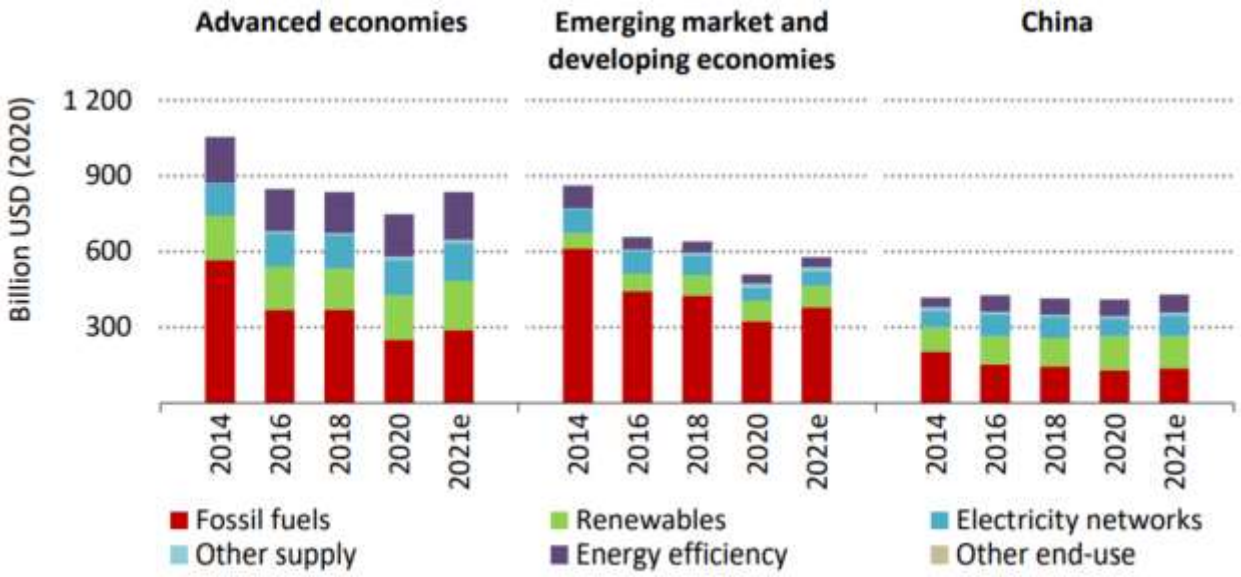
Figure: 1 Energy investments by region, 2022



Alleviation and Variation Methodologies

International Cooperation's Role Strong international collaboration is essential to handling climate change's geopolitical ramifications. Frameworks for collaborative action to limit global temperature increases and decrease greenhouse gas emissions are offered by multilateral accords like the Paris Agreement. However, these agreements need to be reinforced and implemented more rapidly and with more determination. Regional collaboration is also required for managing shared resources and dealing with transboundary climate consequences. Initiatives such as the Arctic Council and the Nile Basin Initiative, for example, provide critical forums for conversation and collaboration among states with shared resources and interests (Adger, 1996).

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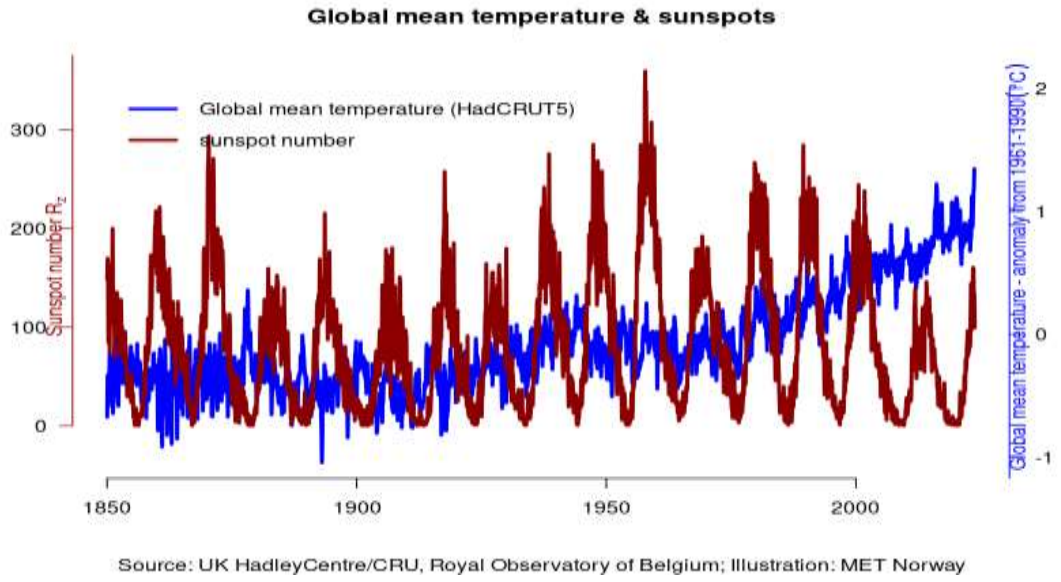

Enhancing Adaptive and Resilient Capabilities

To lessen the dangers of conflict, migration, and resource rivalry, it is critical to increase resilience to climate change. This includes making long-term infrastructure investments, improving disaster response capacity, and aiding vulnerable populations in adjusting to changing circumstances. In urban areas, improving strength entails redesigning infrastructure to withstand extreme weather events, expanding accommodation and social services for displaced people, and establishing financial opportunities to alleviate poverty and social pressure. It comprises encouraging ecologically friendly agricultural practices, safeguarding water resources, and diversifying one's income sources in order to reduce one's dependency on climate-sensitive activities in rural regions (Shakou, 2019).

Fig.: Climate adaptation and resilience, 2022

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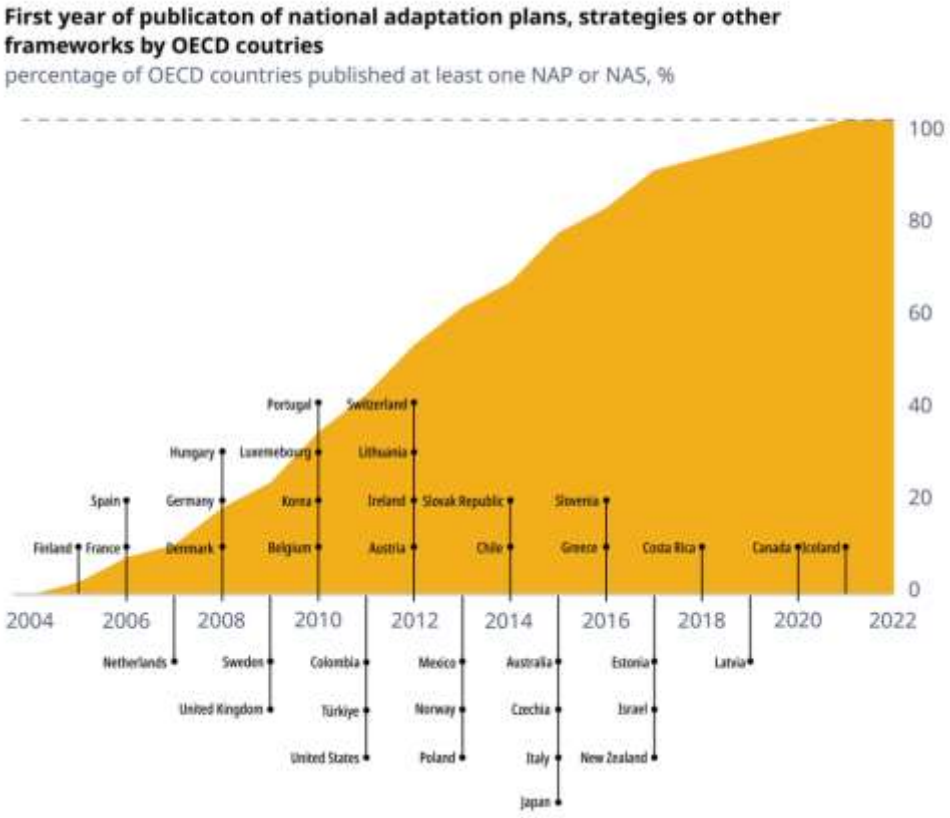

Combining Development and Climate Change Actions

Effective climate action must be linked to larger development initiatives to achieve long-term and equitable effects. This involves connecting climate policy with goals such as economic development, social equality, and poverty alleviation. Promoting renewable energy, for example, may offer marginalized regions clean and inexpensive electricity while simultaneously reducing greenhouse gas emissions. Similarly, sustainable land management approaches have the ability to enhance livelihoods and food security while mitigating climate change (Laukkonen, 2009).

Fig. 1: Diverse climate actors show limited coordination in a large-scale text analysis of strategy documents, 2021.

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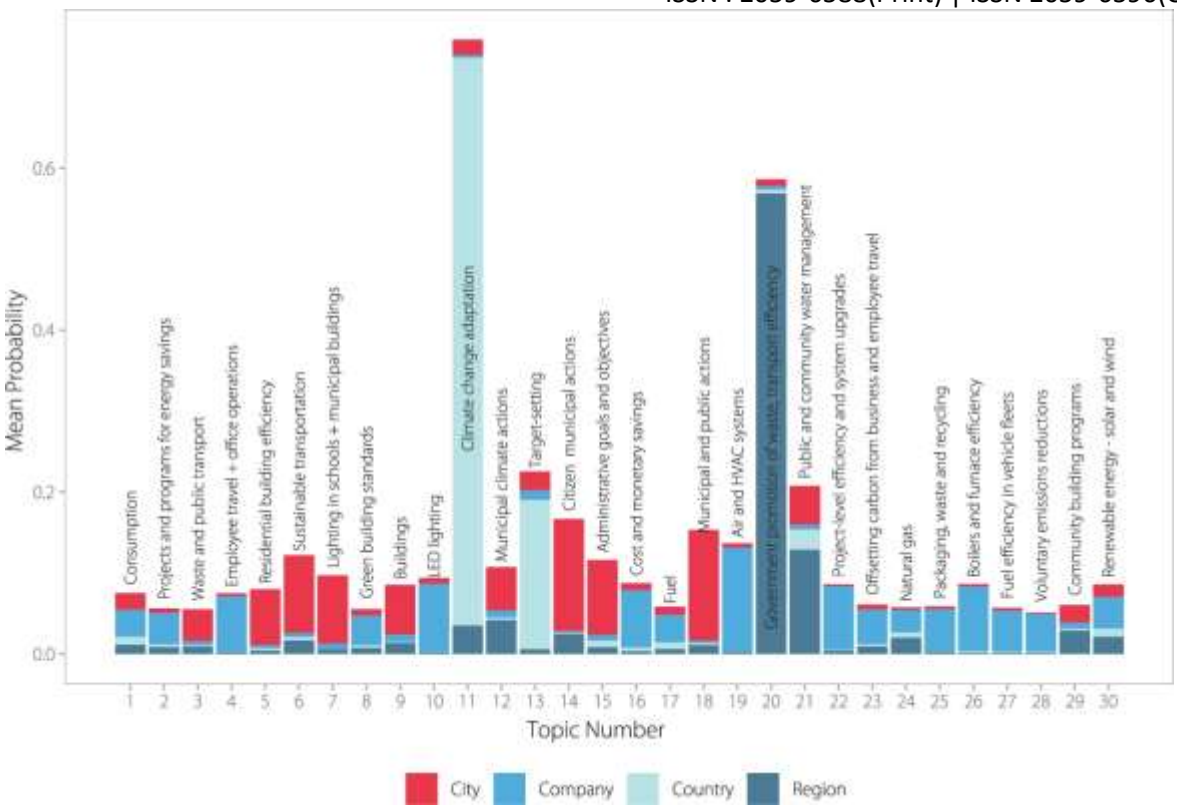

Climate-insecure populations are often assumed to be vulnerable to terrorist violence due to their compulsion towards such violence. This trend is evident in discourses about climate insecurity, where instead of adopting adaptive strategies like cooperative resource allocation, conflict resolution, improved education, or livelihood diversification, climate-insecure populations are likely to be compelled towards and vulnerable to acts of political violence. Modal verbs like 'will' and 'would' are used to construct causal arguments, suggesting a deterministic relationship between climate change, poverty, and terrorism. The text explores the discourse surrounding climate change and its impact on vulnerable states in the Global South, criticizing the climate reductionism of contemporary climate security debates and arguing for direct or near-direct causal relationships between climatic factors and political violence. It suggests climate security policymakers should consider the empirical foundations of causal claims and the potential discursive implicatures that follow from them (Telford, Where to draw the line? Climate change-conflict-migration terrorism causal relations and a contested politics of implication, 2023).

Conclusion

Finally, climate change has far-reaching geopolitical consequences and is a complex and complicated concern. It is changing global dynamics and endangering international stability due to its influence on wars, migration, and resource rivalry. Addressing these issues requires a comprehensive and streamlined strategy that combines environmental activities with systems for harmony, security, and acceptable outcomes. Our common destiny is dependent on our capacity to adapt to the complex interplay of climate change and global geopolitics as we navigate this unprecedented catastrophe.

Climate change is having a substantial geopolitical impact, including increasing conflict, migration, and resource rivalry. Climate-induced environmental pressures, such as water shortages and extreme weather events, are becoming more common and severe, exacerbating regional conflicts and precarious political situations. Human movement patterns resulting from climate change, such as displacement, resettlement, and cross-border migrations, has implications for social stability and international cooperation. The growing competition for scarce resources, such as energy and arable land, is at the heart of global strife. Rising sea levels, desertification, and harsh weather are displacing millions of people, forcing them out of a sustainable future. Since antiquity, the Mediterranean region has been a hotbed of geopolitical conflict, uniting and dividing the zones of influence of significant nations in Europe, Africa, and Asia. Climate change links and increases threats associated with the region's geopolitical aspects, including natural disasters, water and food shortages, energy transition, people migration, conflict, and cooperation. Human migration from MENA countries to Europe and other destinations is impacted by economic inequality, poverty, and environmental and climatic change.

To solve long-term structural issues throughout the Mediterranean Sea, Europe and MENA must work together. Current geopolitical scenarios include a new multi-polar world order centered on a few competing states, the consolidation of a world order based on US political and ideological norms, the world's fragmentation along civilization lines, and the possibility of a set of political-economic blocs acting as key players in a new global order.

Climate change is a major problem with far-reaching social and economic effects, with global average surface temperatures rising by at least 0.6°C, snow and ice cover melting, sea levels rising, and ocean heat content and acidity increasing as a result of human activities. By 2025, 64% of the world's population will live in water-stressed basins or areas where water is scarce. Climate change presents significant adaptation challenges for agricultural systems, resulting in extreme weather events, biodiversity loss, pest and vector-borne disease outbreaks, and changes in fish stocks and aquaculture.

Global sea-level rise is expected to have a significant impact on coastal towns as well as result in migration and shortages elsewhere. Climate change is increasing environmental stress, which might jeopardize political stability and escalate conflicts. The Intergovernmental Panel on Climate Change (IPCC) refers to climate change as a "threat multiplier" that exacerbates existing conflicts and vulnerabilities. Climate change fuels conflict by decreasing natural resources, particularly water and arable land. Desertification and fluctuating rainfall patterns in Africa's Sahel region have increased competition for water and grazing pasture, exacerbating tensions between agricultural and pastoralist communities. Water scarcity is a persistent source of conflict in the Middle East, as upstream water usage increases in response to changing climatic conditions.

Climate change is a major cause of human migration, especially in coastal cities and low-lying island countries. Climate change is creating substantial geopolitical difficulties, such as regional instability, internal displacement, resource competition, land conflict, and changes in energy resources. Climate refugees are crossing borders, causing displacement and relocation of people to adjacent countries. This movement may destabilize local economies, heighten political tensions, and increase poverty, unemployment, and social unrest.

Climate-related displacement also causes internal movement inside countries, as cities such as Lagos, Nairobi, and Kinshasa experience increasing urbanization. This relocation may lead to increased social instability and war. Water shortages and border conflicts may also develop from competing for limited freshwater resources, as shown in the Nile River Basin dispute between Egypt and Sudan. Changes in agricultural zones and land usage are also producing conflict, frequently to the detriment of indigenous peoples and local communities. The shift to renewable energy is changing global energy dynamics, resulting in increasing reliance on critical minerals such as lithium, cobalt, and rare earth elements. These trends are altering geopolitical power balances, which might lead to new types of resource competition and dependency.

International collaboration is required to address climate change's geopolitical consequences, with multilateral agreements such as the Paris Agreement offering foundations for collective action. However, these agreements must be strengthened and executed with more urgency and resolve. Enhancing adaptable and resilient capacities is critical for reducing the risks of conflict, migration, and resource competition. This involves making long-term infrastructure investments, increasing disaster response capability, and assisting vulnerable communities in adapting to changing conditions.

Combining climate action with bigger development projects may have long-term and equitable consequences by linking climate policy to objectives like growth in the economy, social equality, and poverty reduction.

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