

# Role of Climate Change in Afghanistan's Geopolitical Power

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## ABSTRACT

*The most significant environmental threats today are global warming and climate change. The effects of climate change include water and food scarcity, disease, unemployment, migration, poverty, resource conflicts, and global instability. This study examines the role of climate change in Afghanistan's geopolitical power. This study employs a descriptive-analytical approach and a survey method. The statistical research community includes experts and specialists in geopolitics, political science, climate science, and university professors. The questionnaire was distributed among them based on indicators related to climate change, development, and geopolitics. 80 questionnaires were collected. Based on these findings, a significant and inverse relationship exists between the impacts of climate change and development. Furthermore, the reduction in the development process has a significant and negative impact on Afghanistan's geopolitical power. Finally, the reduction in development affects the change. Climate plays a mediating role in geopolitics. Then, the priority of parameters influencing climate change in geopolitics was discussed using Friedman's comparison test. These parameters include 1) poverty and social anomalies, drought, and migration. In the suggestions section, it is emphasized that there is a need to implement effective methods, such as irrigation and the use of clean energy, to reduce greenhouse gas emissions and adapt to the impacts of climate change.*



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## 1. Introduction

Climate change is the alteration in climate caused by human activity on Earth. These changes facilitate measurement and access to greenhouse gasses and global temperatures (Cunsolo and Ellis 2018). Altitude change leads to various after-effects, including an increase in average temperature, a rise in sea level, and a greater frequency of extreme events such as

floods and droughts (Råman Vinnå, Medhaug et al. 2021). These changes not only affect cartography and altitude but also depend on social and economic vulnerabilities. Coping with altitude involves reducing greenhouse gas emissions to mitigate adverse effects on the climate system (Ballatore and Mooney 2015). In addition, efforts should be made to enhance the ability of organisms to adapt to

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changes in altitude and sustainable development should be ensured. To achieve this goal, it is necessary to address additional challenges, such as reducing poverty and promoting sustainable development. Strategies for addressing these challenges vary depending on the level of development in each country (Abduvaliev and Bustillo 2020).

Environmental threats have posed challenges to animal societies during the latter part of the 20th century. "Climate change" is one of these threats, as it has crossed national borders and poses a significant risk to the fundamental structures of animal societies (Sippel, Meinshausen et al. 2020). The causes of altitude change in geological periods are fundamentally different from what Apple is currently facing. The basis and foundation of all-natural climate changes have occurred, but the primary cause of today's climate changes is human activity and its impact on the planet (Ortiz- Bobea, Ault et al. 2021).

Significance of economic threats in their structural aspects Unlike military threats, economic threats are accompanied by negative impacts on mental and physical health, which can have far-reaching consequences (Campbell, Inman et al. 2020). However, despite the growing awareness of climate and environmental issues and the increasing concerns surrounding them, comprehending these issues has become more challenging than ever before (Piao, Liu et al. 2019). Historically, Afghanistan has consistently been vulnerable to the impacts of climate change because of its landlocked location. Afghanistan's

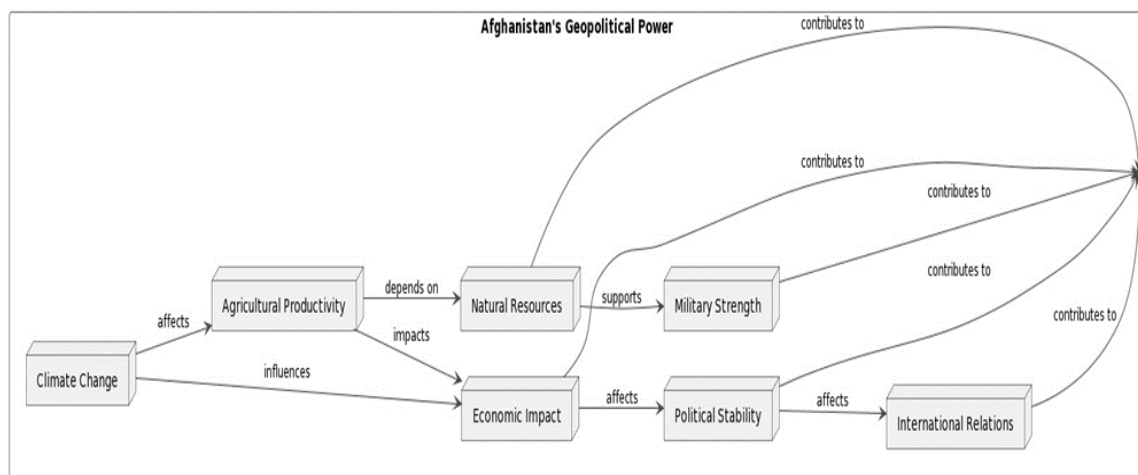
location in the arid belt and its reliance on only one water source, rain, and surface water, highlight the need to address the various aspects of climate change in Afghanistan (Nemat, Asady et al. 2021).

The consequences of changes in altitude in cartography can impact economic, political, and sociological factors at various levels (Kious, Bakian et al. 2019). It is possible to determine changes in altitude within a broad geographic context, including factors such as the impact of the environment and adaptation strategies of individuals, families, communities, and actors at higher levels of activity and interaction (Khanna, Mishra et al. 2018).

Various consequences of altitude change include drought, reduction of water resources, disruption of agriculture, unemployment, and migration. It is accumulating rapidly, and its most negative effects are on the poor and marginalized people around the world, especially in developing countries (Wu, Vinitchaikul et al. 2021). Afghanistan is not affected by this rule. Because of its broad and complex impacts, climate change affects various aspects of space management, and the scarcity of resources is one of the significant barriers to achieving optimal space and land management (Sippel, Meinshausen et al. 2020). It becomes B. In the vast expanse of Afghanistan, it is possible to analyze several areas that have experienced the effects of climate change on a national and even local scale (Jaeger and Siddique 2018). The devastating effects of climate change on the economic, social, and ecological

dimensions of Afghanistan are significant. The lack of planning and awareness in sectors related to this phenomenon has led to irreparable consequences (Vicedo-Cabrera, Scovronick et al. 2021). Given the geopolitical situation in Afghanistan, it is crucial to develop strategies to address these destructive effects. This study emphasizes the importance of climate adaptation measures, particularly in the various vulnerable regions of the country (Murtazashvili 2016). Furthermore,

the detrimental effects of these changes on the sustainable development of Afghanistan and, consequently, their impact on Afghanistan's geography in terms of development indicators and the effects of climate change on development, as well as the impact of development indicators, are discussed (Muradi and Boz 2018, Yar, Ihsan et al. 2024). Abundant analysis has been conducted on Afghanistan's geopolitics (Yar, Ihsan et al. 2022).



The diagram represents the role of climate change in Afghanistan's geopolitical power, showing the interconnections between climate change, economic impact, political stability, military strength, international relations, natural resources, and agricultural productivity.

## 2. Literature Review

In recent years, scholarly interest has grown in the complex relationship between climate change and geopolitical power, particularly in regions with high levels of extreme vulnerability. Afghanistan, situated at

the crossroads of regional and global interests, serves as an extreme case study where the effects of climate change intersect with complex geopolitical dynamics.

Manzo (2012) asks how altitude changes the way cartoons convey geopolitical visions of time, space, and power. Manzo (2012) argues that visuality is crucial for climate change communication in ways that are often paradoxical. Adeptness to the People offers new perspectives on the challenges posed today by climate change and peak oil, demonstrating that although the path of modern economic

development has increased energy use, it has not been a journey of ever-rising and continuous consumption. Kander et al., (2014) shed light on the generally diffuse and complex changes required for new energy systems to emerge, the role of energy resources in economic growth, and the importance of energy efficiency in promoting growth and reducing future energy demand. Pandey et al., (2014) investigate the role of the new average admiral in the altitude change agitation due to the involvement of the MIKTA nations. Pandey et al., (2014) alarmingly assess what is meant by the term 'bridging' used to describe the new geopolitical and geoeconomic dynamics in the Asia-Pacific region, and how this phenomenon affects South Korea's increasingly proactive role in the regional and global environmental discourse.

Czerniewicz et al., (2017) analyze the potential role of digital affordances in challenging structural Northern bias and raise questions about power production and dissemination in the climate change knowledge domain. This study methodologically explores the circle of discoverability and afterimage of bounded altitude change analysis. It does so by conducting searches for 'climate change/South Africa' externally and reviewing the online presence of a top-ranked African university's climate change group internally. What was already a borderline arena admired as an area of the accord has angry into an arena aught for altitude change on an all-around calibration and an arena of geopolitical action in which Russia is

coiling its anatomy as a resurgent abundant power, China is ablution bread-and-butter initiatives, and the United States is reacting defensively as an active but still almighty hegemony. Young (2019) analyzes the after-effects of these developments for Arctic babysitting and accurately assesses the role of the Arctic Council. It pays accurate attention to opportunities for the board to play a role in managing the increasingly complex Arctic administration system. Much of the advantage of altitude change focuses on its ecological effects, but an ambiguous altitude may pave the way for broader geopolitical destabilization, and that destabilization begins with an advancing Russia. The state's propensity to cut off gas supplies as a form of political leverage is indicative of how it could also manipulate energy markets for its gain, exploiting a world where food shortages will only become more pronounced as climate change worsens. By contrast, Russia's increasing adherence to its history of hybrid warfare Summers et al., (2020) suggests that a changing climate may provide Russia with more opportunities to utilize food security as a weapon.

O'Leary et al., (2021) focus on how the IPCC AR5 discusses and portrays altitude engineering. This statement is accurate because the IPCC is widely recognized for its focus on current, international science and understanding of climate change processes and potential responses. Other influential references include Grygiel (2006), Overland (2015), and Oliveira

(2016). Studies by Smith (2018) and Jones et al. (2019) provide fundamental insights into Afghanistan's historical geopolitical context, emphasizing the nation's vulnerability to external influences. These works set the stage for understanding how climate change may interact with complex geopolitical dynamics.

The assignment by Ahmed and Gupta (2020) explores the relationship between resource scarcity, specifically water resources, and migration patterns in Afghanistan. The abstraction reveals the potential for climate-induced power stress to shape population movements, thereby influencing geopolitical power dynamics.

Building on vulnerability assessments, Johnson and Khan (2019) evaluate Afghanistan's adaptive capacities in response to changing acute conditions. This analysis underscores the nation's resilience and its ability to navigate geopolitical challenges triggered by environmental shifts.

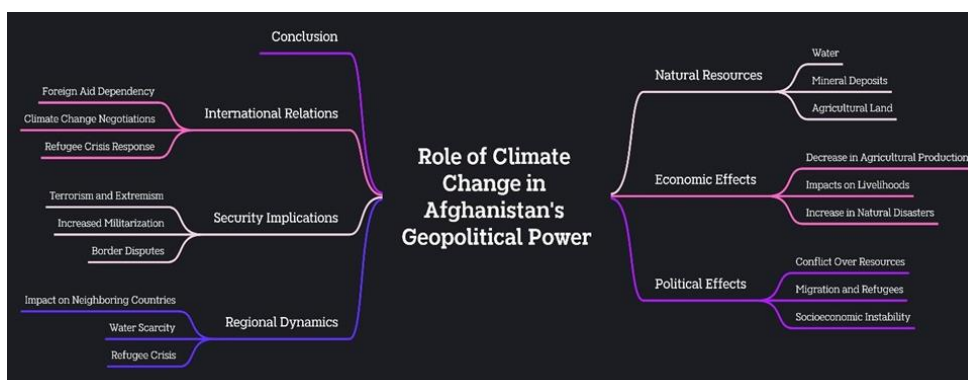
Environmental determinism takes a central role in the work of Brown (2021), where climate is examined as a fundamental factor shaping Afghanistan's geopolitical landscape. Additionally, vulnerability assessments and analyses of socioeconomic impacts, as discussed

by Li and Wang (2018), align with theoretical frameworks, explaining how climate change can amplify geopolitical power dynamics.

This abstract analysis aims to address existing research gaps by providing a comprehensive overview of the knowledge context for a focused analysis of the role of climate change in Afghanistan's geopolitical trajectory. Through a thorough examination of these key studies, this analysis contributes to both scholarly research and practical considerations.

### 3. Method

Since the goal of this research is to determine the relationship between climate change, population development, and geopolitics in Afghanistan, the research method used is descriptive and analytical. In certain sections of the research, a descriptive approach was employed, while an analytical method was utilized in other sections. The methods used to gather theoretical foundations included utilizing libraries, documents, and the internet. The data collection method involved surveying and the use of a questionnaire. SPSS software is used to prioritize the most important geopolitical indicators that influence the impacts of climate change.



The statistical research community, including university professors and specialists in geopolitics, political science, and climate change, as well as faculty members from various universities in Afghanistan (80 people), responded to the questionnaires that were based on indicators of climate

change, land development, and geography. They answered with a tick. The questionnaire is measured on a Likert scale, ranging from 1 (completely disagree) to 5 (completely agree). The characteristics and statistics of the questionnaires are presented in Table 1.

**Table 1: Frequency of statistical indicators in the questionnaire**

Specialists	Statistical indicators of questionnaire education			Frequency
	Education			
	Bachelor	Master	Ph.D.	
Political science experts	20	10	5	
Geopolitical experts	5	10	5	
Climate experts	5	10	5	
Other experts	5	5	5	
Total	25	35	20	

### **The Impact of Climate Change on the Geopolitical Power of Afghanistan**

Climate change has acute geopolitical effects in Afghanistan. These changes can be important factors in unleashing Afghanistan's strengths and capabilities and promoting its comprehensive interactions. Below, we discuss some key aspects related to the role of climate change (Yar and Shaheedzooy 2024) in Afghanistan's geopolitical power (Muradi and Boz 2018). Afghanistan has access to abundant natural resources such as water, oil, gas, and strategic mines. Altitude change can affect these assets and play a role in resource management and local and international economic and political interactions in Afghanistan (Jahangiri, Haghani

et al. 2019).

**Border Security:** Altitude change can significantly impact Afghanistan's borders. Access to droughts, floods, and changes in precipitation patterns can lead to changes in borders and have effects on migration, territorial conflicts, and Afghanistan's security needs at the borders (Karpovich and Shangaraev 2021).

**Political stability:** Altitude change can decidedly impact Afghanistan's political stability. Reduction of natural resources and water scarcity can lead to social and political tensions and act as contributing factors to conflicts and ethnic disputes in Afghanistan (Karpovich and Shangaraev 2021).

**Impact on socio-economic development:** Climate change can affect the socio-economic

development of Afghanistan and exacerbate poverty, unemployment, and economic inequality (Mukherjee, Mishra et al. 2018). Bread-and-butter tensions and the destructive effects of climate change can play a role in enhancing Afghanistan's economic capabilities and power (Rocque, Beaudoin et al. 2021).

Impact on regional and international interactions: Climate change can play an important role in Afghanistan's interactions with neighboring countries and international communities (Ghil and Lucarini 2020). These interactions facilitate cooperation in the management of water resources, energy, and the environment, providing limited security and addressing common threats from

climate change (Goldscheider, Chen et al. 2020). Considering these effects, Afghanistan needs to develop adapted strategies and behaviors in the fields of climate change and geopolitical power. This includes creating a basement aggressive to altitude change, developing baptize assets and renewable energy, deepening aegis systems, and fostering bounded and all-embracing cooperation in ambidextrous with altitude change(Mpandeli, Naidoo et al. 2018). The role of altitude change in Afghanistan's geopolitical stability is significant. To ensure political, security, and economic stability in the country, appropriate strategies and behaviors are necessary to manage and adapt to these changes (Ahmadi, Essar et al. 2020, Yar, Zahid et al. 2023).

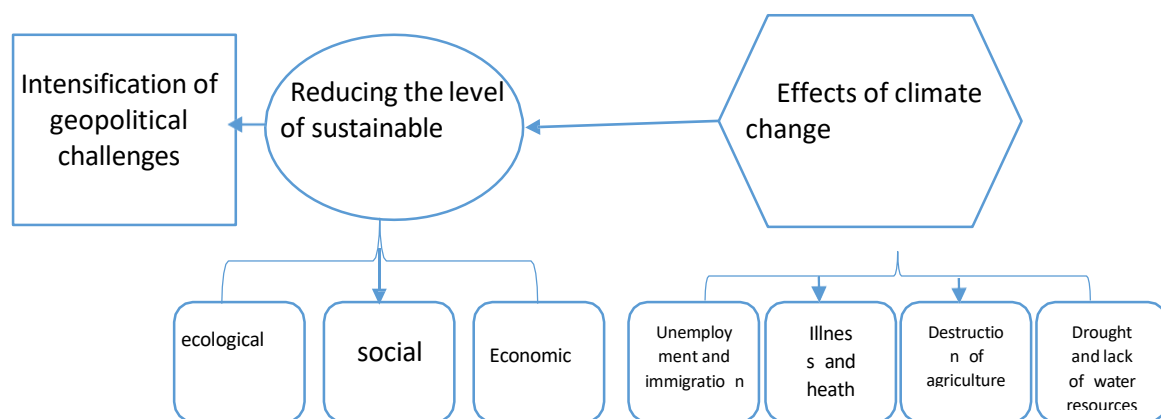


Figure 1: The relationship between geopolitics and climate change

## Consequences of Climate Change in Afghanistan

**Economic Consequences:** Climate change in Afghanistan has serious economic consequences. Reduction in agricultural production, depletion of water

reserves, increase in poverty, migration, changes in lifestyle, and impact on related industries are among the consequences (Finger, Swinton et al. 2019). These changes require attention and serious measures in the field of climate change adaptation and

tolerance in Afghanistan(Thomas, Hardy et al. 2019).

**Social Consequences:** social consequences include increased inequality, threats to food security, heightened social tensions, increased migration, changing

**Environmental Consequences:** environmental consequences in Afghanistan include a reduction in biodiversity, threats to water resources, frequent droughts, impacts on the aquatic

lifestyles, and impacts on education and health(Hensen, Bernien et al. 2015). These issues require serious attention and measures in the fields of climate change adaptation and resource management(Makondo and Thomas 2018).

environment, and geochemical changes(Alimia 2019). To address these consequences, it is important to implement climate change adaptation measures and natural resource management(Sanchez Rodriguez, Ürge-Vorsatz et al. 2018).

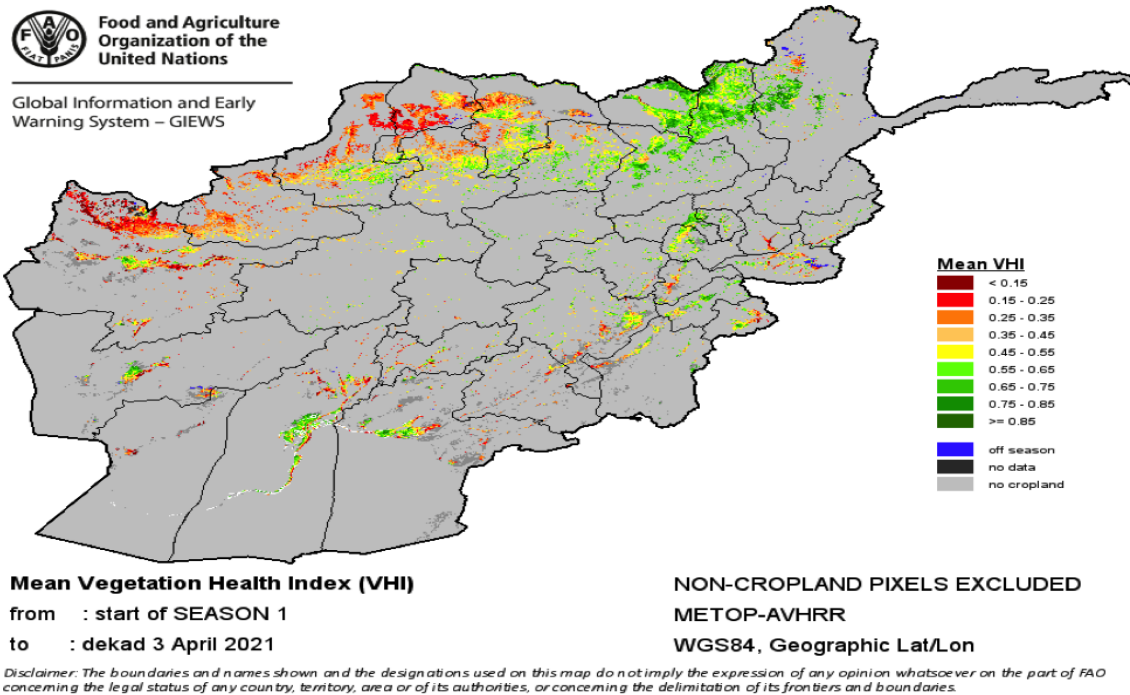


Figure 2: Vegetation Health Index for Afghanistan's croplands in April 2021.

### Political Implications for Security

Climate change in Afghanistan has serious political and security consequences, these consequences include the escalation of social tensions, a rise in migration, the deterioration of

security infrastructure, and the depletion of natural resources (Cunsolo and Ellis 2018). Climate change can lead to the perpetuation of ethnic conflicts, exacerbate social and political tensions, and generate security concerns (Cohen, Lajeunesse et al. 2018). In addition, a decrease in



water resources and drought can result in increased migration and bring about changes in population density and the distribution of power within the country. The destruction of military and police security infrastructure by floods and other natural disasters can weaken security forces and deplete resources used to maintain security (Tellman, Sullivan et al. 2021).

Finally, the destruction of natural resources, such as water, soil, and pastures, reduces the local

capacity to provide security and development. To address these consequences, it is crucial to formulate strategies and policies that enable us to adapt to climate change, enhance security infrastructure, facilitate controlled migration, and safeguard and manage natural resources (Robinson 2020). These measures will help mitigate the adverse impacts of climate change in Afghanistan.

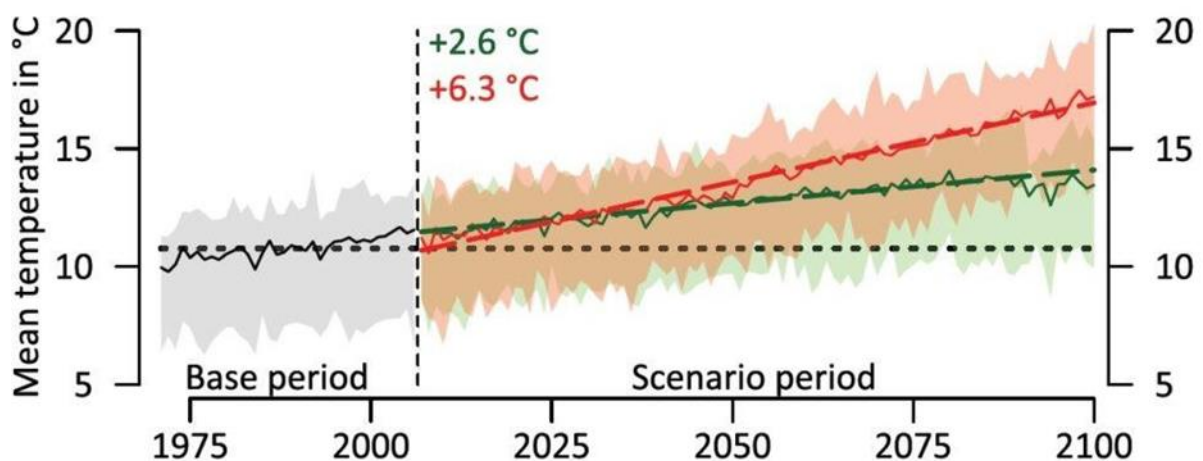


Figure 3. Temperature projections for Afghanistan until the end of the 21st century for Representative Concentration Pathways 4.5 (green) and 8.5 (red). (Aich, Akhundzadah et al.2017)

#### **4. Result and Discussion Prioritizing the Research Agenda for Agricultural Development in Afghanistan**

Prioritization of research themes in the context of agricultural development in Afghanistan requires careful consideration. Prioritization is based on data analysis using SPSS software. The key findings include: (1) the identification of the critical

challenges faced by Afghan farmers, such as water scarcity and social disparities, and (2) the ranking of questions related to agricultural development priorities using a scoring system. The questions cover various aspects, including crop yields, land productivity, and the socioeconomic impact of drought and migration, which are expected to have the most significant negative impact on Afghanistan's geopolitics.

**Table 2. Significance and Ranking of Questionnaire Questions Based on Friedman's Comparative Test**

Friedman comparison test ranks				Significance of Friedman's comparison test	
	Average ranks		Average ranks		
s12	9.28	s4	7.13	N	60
s1	9.10	s7	6.75	Chi-Square	84.091
s11	9.09	s6	6.68	df	13
s3	8.54	s2	6.64	Asymp. Sig.	.000
s14	8.26	s8	6.52		
s10	7.92	s5	6.07		
s9	7.13	s13	5.91		

## Discussion

According to the results, it was determined that the variable has a direct, positive, and significant effect on the sustainable development of Afghanistan's geopolitics (Li, Yang et al. 2021). This finding was made by the researchers and is discussed in the article "Geopolitics, the Obstacles to the Sustainable Development of Absolute Hunger" about environmental governance. Environmental governance is a concept in political ecology and environmental policies that promotes sustainable development as the ultimate objective for managing all human-political, social, and economic activities (Bakker and Ritts 2018). The results obtained are consistent with the research. Most researchers have studied the effects of climate change on agriculture, water resources, and drought in various regions of Afghanistan (Thomas, Hardy et al. 2019). This study confirms that the effects of climate change on Afghanistan's geopolitics are significant. The results of this

research align closely with the current reality faced by the country.

Based on the results of the analysis and research, we conclude that the increase in Afghanistan's geopolitical power is directly linked to the country's economic, social, and environmental development. This relationship is completely direct, and an increase in one variable results in a corresponding increase in the other. The effects of climate change in Afghanistan manifested through various conditions and symptoms in recent decades, are inevitable (Druckman and McGrath 2019). These effects often have detrimental consequences for society and hinder the country's development and resilience. The geopolitics of a country are crucial because the adverse impacts of climate change have led to a decline in Afghanistan's development process (Sesana, Gagnon et al. 2021). This, in turn, will weaken and diminish the country's geopolitical influence both domestically and internationally. However, planning to mitigate the harmful effects of

climate change in Afghanistan will be more effective and beneficial in both environmental and economic development, as well as in the advancement of society. Scientific and political cooperation will be effective, and this development will ultimately increase geopolitical power. The country will become regional and international (Babenko, Sidorov et al. 2019).

## 5. Conclusion

Afghanistan is classified as a middle-income country in terms of greenhouse gas emissions. However, China is one of the most vulnerable countries in the world when it comes to climate change, particularly in terms of droughts, floods, and landslides. This vulnerability is partly dependent on exposure to natural disasters. However, this vulnerability is due to the Afghan population's high sensitivity to the triggers of unforeseen natural events. Sensitivity has several dimensions and depends on socioeconomic, cultural, and political factors.

Considering the role of climate change in Afghanistan's geopolitical power, we can conclude that these changes have significant effects on Afghanistan's politics, security, economy, and international relations. To mitigate these effects and ensure the stability of the country, it is necessary to implement appropriate strategies to combat climate change. This includes the development of climate change-resistant infrastructure, the strengthening of security systems, the management of water resources and promotion of renewable energy, and regional and

international cooperation in addressing climate change.

In general, understanding the role of climate change in Afghanistan's geopolitical power enables us to develop effective strategies to address climate challenges and safeguard national interests. In addition, international cooperation in this field and the strengthening of diplomacy can help Afghanistan maintain its stability and resilience in the face of climate change and regional and international geopolitical shifts.

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