

The Impact of Climate Change on Sustainable Development and International Relations in China

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Abstract: Global climate change has a significant negative impact on both sustainable development and the stability of international relations in the world. Global climate change affects both international relations and sustainable environmental policies to varying degrees. However, currently, most studies focus on analyzing the impact of climate change on the global environment from the perspectives of economic development and food security, and there is no discussion of the linkages between climate change, sustainable environmental policies, and international relations, so this study will analyze the sustainable development issues and international relations in terms of the impact of climate change on China by using realism theory and Liberalism theory. This study shows that climate change, environmental security planning, and international relations are interactive. A rational and valid environmental security planning mitigates the effects of climate change to a certain extent, while the implementation process of security planning contributes to the harmonious development of international relations.

Keywords: climate change, carbon neutrality, environmental development

1. Introduction

There is a direct and urgent threat to both the environmental security of the world and international social relations' stability due to global climate change [1]. The implications of global climate change are largely not only unpredictable, complex and difficult to overcome, but also potentially disastrous [2]. The UN Security Council hosted a discussion on climate and security, highlighting climate change as a possible hazard to social harmony and security in the future. Considered a major challenge in the 21st century, it was deemed essential that all the countries in the world should build a consensus on climate change and put it on the political agenda [3]. Climate change may cause dramatic consequences in terms of military security and environmental security. On the one hand, climate change may contribute to more military conflicts in East Africa and influence the lives and security of African people [4]. On the other hand, climate change can weaken the capability of ecosystems to deal with chemical components, leading to melting glaciers, rising sea levels, high temperature rises, and extreme weather events [5]. For example, Lieven [6] pointed out that the heatwave in Russia in 2010, combined with the smoke intake impacts of forest fires in that year, caused at least 41,000 deaths. That means that climate change should be treated as a security threat urgently, and it can be connected with international relations and sustainable development closely.

Many scientists have established a link with both climate change and environmental sustainability. Barnett [7] found that sea levels rising could cause serious damage to national security. For example, Lorimer [8] described that every 45 cm of sea level rise would cause Bangladesh to lose 10.9% of its territory, pushing about 5.5 million people to move away and hence leading to heavy migration. Simultaneously, some studies also explored that climate change may enhance international relations. As an illustration, Beardsworth [9] discussed that there are tremendous differences and inequalities between industrialised and developing countries, with wealthier and more advanced nations being less sensitive to the effects of climate change. This was addressed by the unity between developed and developing states, and thus foster more peaceful and friendly international relations. In other words, one can use practical climate cooperation as a political diplomatic strategy to improve international relations. From this perspective, it lacks specificity to study the effects of climate change on global environmental security and international relations, so this study will analyse security issues and international relations in terms of climate change's effects in China.

This essay consists of four parts. The first part describes the background of global climate change today, highlighting the importance of climate change by explaining its impacts on global ecological security, defence, and other aspects. Secondly, this study reviews the literature on international relations, climate change, and China's environmental security policies. Then, this study will take China's environment security planning as an analytical focus, while applying realism and liberalism when discussing how China's climate change policies affect security issues and international relations. Lastly, this study draws the relationship between climate change, security issues, and international relations, while considering the stronger effects.

2. Related Works

Studies over the last two decades have provided significant information on climate change. Natural scientists indicate that climate change is the most urgent environmental security challenge that the world faces nowadays [10]. Smil [11] argued that climate change had overtaken the risk of nuclear war as its consequences are uncontrolled, massive, and highly destructive on a global scale. However, Barnett [7] stated that climate change has emerged with the perceivability as a security problem, with concerns about the results of environmental change for society globally, and the post-Cold War changes that have taken place in the international security environment.

Although climate change stands as the most significant among a range of environmental change issues, it has infrequently been addressed as a security issue in a systematic way. For instance, some researchers analysed climate change from an economic perspective as it influences economic security, leading to a decline in future welfare [12]. Wheeler and von Braun [13] looked at the possible consequences of climate change on food supply from a food security perspective. Therefore, this study attempts to provide a critical understanding of climate change from an environmental development and international relations perspective. This study will choose the topic of environmental security, using China as testbed to discuss how climate change will shape a developing country's environmental development and international relations.

3. Case Study and Methods

3.1. Research Area

This study looks at climate change's effects on environmental security planning and international relations in China. China has witnessed rapid and sustained economic progress during the past three decades and recently ranked second only to the US when listing the world's largest economy [14,15]. Furthermore, China is now the leading emitter of carbon dioxide and energy generators in the world [16]. No doubt, China plays a crucial part in the process of mitigating global climate change.

3.2. Realism Theory

Collins [17] stated that realism is a theoretical approach to international relations focusing on how nations pursue security and other potential aims, as well as explaining what security policies a nation has chosen based on its interests. When it comes to considerations of the implications on the security of China and international relations related to climate change, realism has the following key features. To begin with, Bieler and Morton [18] indicated that the nation is perceived as the lead actor, performing in a rational, utility-maximising approach. That means that the state seeks to maximise the interests and power of its situation by operating on utilitarian principles or rational regulations. To illustrate, China has functioned as a rational operator when formulating environmental security plans to fight climate change. The Chinese government has made a rational analysis of the causes of climate change and has minimized the effectiveness of security plans based on rational norms. For example, China has proposed rational objectives of carbon peaking and carbon neutrality for the impact of climate change to achieve its maximum interests.

Secondly, Wivel [19] noted that realism highlights the anarchy of the global system, believing that there is no monopoly of authority in the international system, which drives states to place their own national security as their primary objective. To be more specific, political interests and economic interests are less important than the survival of the state. One clear example is that the Chinese government is conscious of the serious consequences of climate change regarding its own security and environment. This means they treat climate change as a security issue and take positive measures, such as adjusting its industrial structure and using clean energy to combat it, showing the Chinese government putting national security and survival first.

Thirdly, the sovereign state is the key player in policy-making and the main actor in the international system, which means that there is no authority over the state that can constrain it, so the nation takes self-help as the most significant tool for achieving national security and survival [18,20]. What's more, Purdon [21] identified that realism is the ideal theory that can be applied to climate change and environmental security in China. This results from the realist theory's emphasis on relative gains has promoted some countries' leaders to be more cautious in their international commitments and to reserve resources for unexpected events domestically, as well as their own national adjustments to climate change. These two points above are the reasons that realism is the ideal theory to be applied to the study of climate change and security in China.

3.3. Liberalism Theory

Collins [17] illustrated how the theoretical framework of liberalism is the main framework for practicing international relations nowadays and is highly significant in the field of international political studies. In addition, liberalism holds an optimistic view of the political, security, and economic prospects of states in international affairs, particularly when cooperating with other international institutions and governments. The features of liberalism can be described in the following aspects.

Firstly, international cooperation is a normal and frequent phenomenon and that collaboration is a rational choice for all [22]. For example, in the above-mentioned environmental security plans developed by China, due to the lack of innovative technologies for hydro-power generation, China seeks international cooperation with Germany, where China can gain access to the latest technologies to mitigate the effects of climate change while Germany can receive substantial financial support, thus achieving a win-win situation for both sides and promoting more harmonious international relations.

Secondly, liberalism holds that the character and structure of the international system have an essential influence on a nation's behaviour, which means that international systems and institutions

mitigate the limits of anarchy on cooperation between states and play an independent function [17]. For instance, China has developed up to 63 bilateral or multilateral partnerships with international institutions and other governments, including the International Energy Forum (IEF), the Association of Southeast Asian Nations (ASEAN), and the Asia-Pacific Partnership on Clean Development and Climate (APP) [23]. Multiple international allegiances have allowed China to benefit from the renewable energy field, thus improving the impact of climate change on the environmental security of China. In addition, multiparty cooperation can also lead to stronger and more harmonious international relations between China and mutual countries.

Thirdly, the interdependence between state preferences helps to shape national behaviours. In contrast to realism, liberalism places greater emphasis on interdependence, collective security, the common interests of nations, and international cooperation [24]. Therefore, when analysing China's environmental security plans, it is necessary to take a global, collective perspective, finding that the Chinese climate measures not only contribute to its own security but also safeguard its collective interests and contribute to developing international relations. Reducing climate change's effects is part of a national interest that not only promotes interdependent and mutually beneficial relationships between countries but also underlines the role of China as a leader and a participant in the international security system, enhancing its political status and allowing it to ultimately benefit [25]. Another key point to remember is that many countries have taken measures under the call for climate action in China. For example, the Canadian government, to achieve the collective benefits of global environmental cooperation and the broader goal of sustainable development, organized municipal and scientific groups to select a sample of 11 communities where the first Canadian carbon tax and a range of climate policies are being implemented to monitor the reaction to climate change [26]. Lastly, Grieco [27] argued that liberalism believes the state should strive for absolute gains, which means it regards itself as profitable in cooperation and does not care whether it profits more or less than others. As the biggest carbon producer in the world, the carbon peaking and neutral goals established by China will be of great help in achieving the targets laid down in the Paris Agreement to maintain global warming below 2 °C by 2100 [28]. That is to say that the environmental measures taken by China in response to climate change not only serve its national interests but also contribute to achieving the global climate action targets.

3.4. Challenges and Aims

As demonstrated above, realism is the ideal theory for studying climate change and security in China, but its limited use lessens its effects when critically engaging in debates around climate security. For example, China needs to seek international cooperation in its environmental security planning, with realism believing international cooperation is difficult to succeed, which makes it difficult to analyse. In contrast, liberalism considers mutual benefits and cooperation as the main means of national security, which allows for a reasonable analysis of security plans. It can also illustrate additional points that realism cannot analyse, regarding institutions, mechanisms and absolute gains, and so on. So, liberalism has become the alternative theory that can be used to push the theoretical approach to the next level. In summary, the combination of realism and liberalism provides a comprehensive analysis of climate change's effects on environmental safety projects and international relations in China.

4. Discussion and Analysis

4.1. Climate Change's Effects on China's Sustainable Development and International Relations

To be honest, climate change poses many negative implications for both sustainable development and international relations in China. Firstly, the North China Plain in China has undergone a tremendous expansion of cultivated agriculture that has resulted in lower temperatures and humidified surface environments. However, it increased the temperatures and wetness, while strengthening the intensity of heatwaves [29]. Secondly, climate change can lead to violent conflict, which can also affect national security and domestic relations. Floyd [30] found that most environmental depletion caused by climate change stems from the scarcity of non-renewable resources. For instance, water pollution contributes to the scarcity of clean water and the scarcity of the precipitation and temperature regularity on which farmers depend, which makes internal resources unequal. Finally, Brzoska [31] illustrated that the military forces consume large quantities of natural resources, which makes them a crucial element of the national energy budget and a consideration for the government when addressing the impacts of climate change. That is to say that climate change affects military security, and conversely, that greenhouse gas emissions from the excessive development of military power, which leads to climate insecurity. As can be seen, climate change's impact on China is immense. In other words, climate change will have an impact not only on the national security of China but also on its environmental security.

4.2. China's Measures in Response to Climate Change

To mitigate a range of security issues, such as environmental security, national security, and external international relations caused by climate change in China, Chinese President Xi [32] declared that China intends to reach a carbon-neutral status by 2060, with a goal of reaching a carbon-free status by 2030. This aims to realise ecological minimization development at the 75th General Debate of the United Nations General Assembly. This demonstrates that China has undertaken its responsibility as a world power. To realise its aim of carbon peaking and carbon neutrality, China has implemented a series of environmental security measures to guarantee sustainable development. The plannings can be listed in the following aspects. Firstly, green energy sources, such as wind and geothermal energy, will substitute for coal demand, which heavily influences China's energy structure. However, the cost of coal consumption will be higher, so the energy consumption structure will need a transformation [33]. Secondly, Green and Stern [34] indicated that the pursuit of maximum GDP development in China has led to the expansion of heavy industry and carbon-intensive industries over the past two decades, resulting in a shift from a low-energy to a high-energy industrial structure. So, in order to minimize carbon emissions, the Chinese government has started to reshape its industrial infrastructures, exploring the full potential of the carbon emissions generated by the adjustment, while transforming the traditional crude growth approaches into more intensive ones [28]. Finally, Holzer and Zhang [35] pointed out how they require renewable energy technologies to improve the energy structure, but there are problems, such as insufficient technological innovation and poor development experience in China's renewable energy when compared with other countries. Therefore, it is vital to seek international cooperation and assistance from international institutions and other developed countries. For example, China and Germany have agreed to cooperate on technological developments in the field of small hydro-power projects. Tibet has seen the establishment of a monitoring system for the functioning of small hydro-power projects, which contributes to the rapid development of the wind energy sector [23]. So, China has agreed on a partnership with the EU to help them acquire the technology at a lower cost. Meanwhile, China has become more inclined to seek a win-win situation

for technology transfer and mutually beneficial technology partnerships with other countries in relation to climate change [3]. Obviously, China is not only relying on its own power to alleviate the effects of climate change but is also seeking international cooperation to maximise mutual benefits.

5. Conclusion

Focusing on climate change, this study has analysed the impact of climate change on environmental security planning and international relations in China. This study has addressed three questions, including climate change's effects on security planning in China, its impact on China's international relations, and how to grasp the connection between climate change, security planning, and international relations with the help of realist and liberal theories. Drawing on Barnett's framework, this study has demonstrated that climate change, environmental security planning, and international relations interact with each other. A reasonable and effective environmental security plan alleviates climate change's effects to a certain extent, while the process of implementing the security plan stimulates the harmonious development of international relations. With an emphasis on security issues, this essay explores the consequences of climate change on China's security and measures developed accordingly.

This study has several limitations. Firstly, it does not discuss the environmental security in China in a classified manner nor summarise the corresponding plans. Secondly, it concludes that China's environmental security plan for China focuses too much on energy restructuring and does not find several more dimensions on which to draw. Finally, when applying realism and liberalism to the research, the descriptions of the characteristics and perspectives of the two theories are not very comprehensive, which leads to a lack of depth on the implications of climate change in China. Although findings in this study have proved the connection between climate change and security in China, more empirical studies on climate change's impact must be conducted to further discuss and refine these findings. This study may inspire further research which can improve upon the following areas. Climate change's impact on China's environmental security is endless, so it is necessary to find the latest data when researching. However, the government formulates many initiatives in reaction to climate change, so it is critical to match these with corresponding environmental issues. In conclusion, China, as a major world power, is not only taking active steps to address security issues when facing the effects of climate change but is also simultaneously fostering international relations between countries.

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