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Research Article

CLIMATE CHANGE: THE ROLE OF SOCIOLOGY

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ABSTRACT

This review article aims to comprehend which themes sociologists should focus on when discussing climate change. To conduct the study, the systematic review method was adopted. By scanning the sources, six major themes were identified based on the codes extracted from the documents that establish a relationship between sociology and climate change. This is followed by a discussion of reflections on these themes among Central Asian countries. The final part of the paper presents various academic and action-oriented suggestions to Central Asian academicians about the sociological context of climate change. It seems necessary to increase sociological studies and academic activities on climate change in Central Asia, given the current inequalities and potential dangers.

Keywords: Climate change, Central Asia, Environmental Sociology, Social inequalities.

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INTRODUCTION

Global climate change has significant impacts on society and the environment and is one of the most pressing global challenges of our time. Climate change is not only a matter of the natural sciences; it is a complex issue that encompasses various disciplines, including sociology, economics, anthropology, and political science. As a result of climate change, human behavior, social systems, and cultural values are profoundly impacted.

In line with the frame above, the main purpose of this article is to explore how sociology can contribute to our understanding of climate change, and how it can facilitate a more equitable and just policy decision-making process. It is because the sociological approach to studying this problem is uniquely equipped to examine the societal dimensions of this problem.

It is not the only article to emphasize the importance of sociology in climate change research (Pettenger, 2007; Lever-Tracy, 2011; Shue, 2014; Dunlap and Brulle, 2015; Carolan, 2016; Pastor and Morello-Frosch, 2018). The importance of the paper lies in merging the role of sociology in climate change studies under subheadings and illustrating it with examples from Central Asia. By using the systematic review method, scientific studies that examine climate change from a sociological perspective were analyzed. A thematic presentation was used to convey the findings of the study. There are six themes to the sociological effects of climate change according to the article. These can be summarized as follows:

1) Disadvantaged groups (lower classes, indigenous peoples,communities in underdeveloped countries, women, the elderly, etc.) suffer disproportionately more than others from the results of climate change.

2) Social norms and values that are embedded in human societies are at the root of climate change, and its consequences will also have an impact on social norms and values.

3) Climate change mitigation and adaptation policies have and will have social and economic repercussions as a result of climate change.

4) Several effects of climate change will escalate and intensify conflicts between regional and global governments over natural resources.

5) Disasters caused by climate change will trigger migrations, and these migrations could serve as fuel for populist nationalism in the future.

6) There is no doubt that climate change has an adverse impact on the political agenda, and social movements in this area will grow as they become more diverse as a consequence.

These six themes are discussed under each subheading in the results section of the article. We provide examples of how Central Asian societies are affected by climate change in the section that follows. Because numerous international reports indicate that Central Asia is one of the most vulnerable regions to climate change. In the conclusion of the article, the measures to be taken are listed. One of the central claims of the paper is that it is critical to establish climate change research centers where sociologists are active to observe the social effects of the

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phenomenon. This would enable them to present predictions for the future and to provide policymakers with relevant scientific material.

METHODOLOGY

In order to conduct this study, the systematic review method was adopted. Systematic reviews are standardized and comprehensive methods for synthesizing existing research. This method involves finding relevant studies, using explicit inclusion and exclusion criteria, and synthesizing them (Russell et al., 2009). Historically, systematic reviews have been used in pharmacy and health research, but currently, social scientists are increasingly using them (Chapman, 2021). In contrast to a literature review, a systematic review aims not only to provide summary information about a subject but also to produce coherent output. Systematic reviews could be repeated and have concrete findings (Kysh, 2013).

In general, systematic reviews could cover meta-analyses and be long-term studies. Despite this, this research does not adhere to such a framework. The study has benefited from a systematic review of articles and books that deal with climate change in a sociological context, which may be viewed in the references. Basically, the time and the limitations of the article constraint are the main reasons for conducting the research in this manner. Nonetheless, it is hoped that in the future there will be further development of the research.

The following reputable databases were searched to get access to articles and books written in the field of sociology: JSTOR, Google Scholar, ProQuest Social Science Journals, Wiley Online Library, and Sage Journals. By examining the sources obtained, we focused on sociological debates on the causes and consequences of climate change. To categorize the codes, these were clustered among themselves. Following the clustering of the categories, we arrived at the six themes listed above and elaborated below.

RESULTING THEMES

Social Injustice and Climate Change

Several factors contribute to the disproportionate impact of climate change on marginalized social groups, including low-income communities, communities of color, and indigenous communities (Moss, 2009; Posner and Weisbach, 2010; Savoy and Deming, 2011; Shue, 2014; von Lucke, 2021). It is often difficult for these communities to address the impacts of climate change due to a lack of resources and political power.

Climate change disproportionately impacts marginalized communities through extreme weather events, such as heat waves, droughts, floods, and storms (Robinson, 2018). These events can result in deaths, property damage, and displacement. Disadvantaged people are more likely to live in low-lying coastal areas or areas with poor infrastructure, which are more open to being affected by these types of events. In addition, they have fewer resources for preparing for and recovering from crises.

The impacts of sea level rise and coastal erosion are two other ways climate change unequally affects marginalized social groups. As a result of these impacts,

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land, and property can be lost, and communities can be displaced. Indigenous communities have strong cultural and spiritual ties to their land, and the loss of that land can have devastating effects on them (Berkes, 2012).

Due to increased exposure to heat, air pollution, and disease, climate change also adversely affects disadvantaged communities' health. The impacts of heat waves and air pollution are more severe in low-income communities and communities of color since these communities live near polluting industrial facilities and highways. Furthermore, underprivileged communities often do not have access to green space, healthy foods, or clean water, which can expose them to the adverse effects of climate change (Vermeulen et al., 2012; Kracht and Schulz, 1999).

There is also evidence that the impacts of climate change are compounding existing social inequalities, such as poverty and lack of access to education and healthcare. These inequalities unevenly affect disadvantaged groups. The development of mitigation and adaptation strategies for climate change has to take into account the specific vulnerabilities of marginalized communities when it comes to determining policy and decision-making processes (Ustun and Cizreli, 2022).

Climate Change, Social Norms, and Values

Social norms and values play a noteworthy role in shaping individuals' and communities' responses to climate change. Values describe what society believes is significant or desirable, while social norms describe the unwritten rules and expectations that govern behavior. Norms such as consumerism, which emphasizes the acquisition of goods and services constantly, may discourage individuals from taking action on climate change. Despite their cultural expectations, individuals may find it difficult to lessen their consumption and emissions as a result of this norm (Wheeler and Beatley, 2014; Conca et al., 2002).

People's values can also influence their perceptions of climate change and how they respond to its effects. Economic growth and development might be more prominent for a community than protecting the environment, so they may not support policies that reduce carbon emissions. In contrast, a community might have values that may support policies that encourage sustainable practices and back investments in renewable energy sources (Wolf and Moser, 2011).

It is important to note that social norms and values can have a remarkable impact on how individuals and communities perceive and respond to climate change's impacts. Individuals and communities may take action on climate change to protect future generations if they have a strong social norm of intergenerational responsibility, as is the case in some cultures. Other cultures might have a norm of individualism, making it challenging for people to see themselves as part of the climate change solution (Skillington, 2020).

We should keep in mind that social norms and values are dynamic and continuously changing, rather than static. Climate change can be addressed more effectively by policymakers and practitioners by understanding how social norms and values shape responses. In light of this, moral movements hold substantial potential. In this regard, the social sciences, especially cultural theory, are important tools for combating climate change (Dunlap and Brulle, 2015).

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Results of Mitigation and Adaptation Policies

It is important to understand how climate change mitigation and adaptation policies impact different groups of people and how they affect the distribution of costs and benefits. There is a difference between this theme and the adverse impacts of climate change on disadvantaged groups. In this case, the triggering source is not climate change, but our struggle to deal with it. By considering the social repercussions of policies to tackle climate change, fair policies can be pursued.

For example, by building sea walls to protect coastal communities from storm surges or planting drought-resistant crops, climate change adaptation policies may notably reduce the vulnerability of communities and ecosystems to the impacts of climate change. However, the negative effects of these policies, particularly on vulnerable groups, on the whole, and in social life should not be ignored. Renewable energy investments and carbon taxes are examples of climate change mitigation policies that reduce or prevent greenhouse gas emissions. On the other hand, the cost of energy and transportation may increase for low-income households if a carbon tax is implemented (Ligthart, 1998; Andersson and Atkinson, 2011).

In terms of economics, these policies play a role in the distribution of costs and benefits within society. Investments in renewable energy can create jobs and stimulate economic growth, but they may also increase costs for consumers and businesses. Policies can have different impacts on different groups of people based on their social and economic status. It is essential to balance protecting vulnerable communities and economic growth when developing an effective policy. Some cities almost exist with coal mining around the world, for instance. People living in these cities perceive the coal phase-out process as a threat due to green policies (Ustun and Cizreli, 2021).

Specifically, social scientists are becoming increasingly interested in the concept of a "just transition" for this reason (Wang and Lo, 2021). Energy efficiency and renewable energy policies, for example, may create jobs and stimulate economic growth, while also reducing greenhouse gas emissions and air pollution, therefore benefiting society and the environment. Climate change mitigation and adaptation policies should consider social and economic aspects, as well as balance the need to address climate change with protecting vulnerable groups and supporting economic escalation. It is possible to predict potential problems affecting vulnerable groups and working sectors through the approach of just transition (Rosemberg, 2010).

Urbanization policies can be significantly affected by mitigation and adaptation policies. To reduce greenhouse gas emissions and adapt to the effects of climate change, changes must be made in urban planning, building designs (Kuttah, 2022), transportation systems, and energy consumption (Chai, 2022). The results of these initiatives may have a positive consequence for sustainability and resilience in cities, but they may also entail new challenges and trade-offs, such as a rise in costs, alterations to land use patterns, and an increase in social inequities. Urbanization policies that have the potential to be effective must consider the interplay between climate change and urban development. Experts must strive to balance economic, environmental, and social interests (Srivastava, 2020).

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Climate change can create or exacerbate conflicts over resources and territory in several ways. As the climate changes, it can lead to alterations in the availability and distribution of resources, such as water and food, and can also lead to changes in the location and suitability of land for human habitation and economic activities. These can create competition and tensions between different groups, leading to conflicts.

Conflicts over Natural Resources

Water scarcity and competition for access to water can result from rising temperatures and changing precipitation patterns. Farmers, urban dwellers, and industries use water in different ways, which may cause conflicts. Likewise, coastal areas may be forced to relocate inland as sea levels rise and storm overflows and flooding become more prevalent. Conflicts over territory can be exacerbated by competition for land and resources in these areas. According to research by Hsiang et al. (2013), climate change has a direct effect on regional conflicts.

Land suitability for different types of economic activities can also be affected by climate change. As temperatures increase, certain crops can be more difficult to grow in certain regions, resulting in changes in land use and resource competition. For example, grazing land is at risk of being in conflict with farmland in rain-dependent regions of Africa (Scheffran et al., 2019). As a result of climate change, fish stocks can also be affected in a different way, leading to conflict between different fishing communities and even countries (Mendenhall et al., 2020). The fact that many major rivers flow through multiple countries may further exacerbate conflicts over the use of transboundary water resources caused by climate change (Schaar, 2019).

The effects of climate change can exacerbate existing conflicts and tensions, but they do not cause them. Climate change can contribute to the severity of existing problems by acting as a "threat multiplier." A comprehensive and integrated approach is required to resolve conflicts over resources and territory, which have often complex and multifaceted nature. The impact of social dynamics on conflict would be understood through sociology.

Immigrants and Rising Nationalism

Changing weather patterns, rising sea levels, and the increased frequency of natural disasters are likely to result in large numbers of people being displaced from their homes because of climate change. Existing vulnerabilities can be aggravated, and new ones can be created, such as crop failures, water scarcity, famine, and sea-level rise, which can cause migration. It has previously been predicted that global migration would reach 200 million people by 2050 as a result of climate change (IOM, 2008). Nevertheless, these estimates are rising. Globally, 216 million people could be climate migrants by 2050, according to another study conducted by the World Bank (Clement et al., 2021).

Migrations induced by climate change may take various forms, including temporary or permanent displacements within and across national borders. Most people displaced by climate change will likely remain in their own countries. However, some people may also be forced to move on cross-national borders as climate refugees. Local communities and governments can be affected by these

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displacements, resulting in tensions on a social and political level. South Asia has experienced the consequences of the abovementioned factors in recent years (Bhagat and Rajan, 2019).

Various other factors influence migration, including economic opportunities, political instability, and social factors. It is critical to note that climate change can interact with and make more severe these factors, which can result in complex and dynamic migration patterns (McLeman, 2014). To reduce the impact of climate change on migration, it is imperative to address the root causes of climate change and provide support to those who are displaced.

The influx of forced migration caused by wars and economic recessions in the receiving countries in recent years has triggered populist and nationalist movements. It is predicted that this trend could deepen with climate change. In addition, the claim that global measures are a threat to national interests is a rhetorical device used by populist nationalists. Xenophobia and radical movements would gain a rhetorical opportunity throughout the world as a result of the cross-border transition caused by climate change (Ahuja, 2021).

Social Movements and Activism

In addition to being an environmental issue, climate change also has social, economic, and political dimensions, so it may affect various social-political groups in different ways. People organize to protest environmental problems, adapt to their impacts, and mitigate their causes, as well as influence and shape existing movements. The impacts of climate change may be particularly severe for people living in vulnerable areas, such as low-income and marginalized communities, who may demand that more investment be made in adaptation measures. Extreme weather events, such as floods and storms, may cause people to demand more action to prevent them in the future. It is the responsibility of environmental justice movements to ensure that marginalized communities are not unequally affected by the negative outcomes of climate change. Peru, for instance, has many non-governmental organizations that target combating the effects of climate change (Orlove, 2009).

Different groups of people may have divergent interests and priorities when it comes to addressing climate change, which can also alter political power dynamics. The fossil fuel industry, for instance, may have an interest in maintaining the status quo, whereas environmental and social justice groups may advocate for more ambitious climate policies (EBC, 2022). Similarly, climate change may result in changes in the political landscape, such as the emergence of new parties or movements that prioritize climate action, or the decline of those that do not (Dessler and Parson, 2010). Even religious movements have been influenced in such a way as to become environmental activists in the face of climate change (Kearns, 2011).

There is also strong evidence that political leaders can influence the societal discourse around climate change in a significant way. This influence can have a salient impact on public opinion and the level of public engagement with climate change. It is possible to discourage public engagement and support for climate action when political leaders deny the existence of climate change or do not accept its human-caused characteristics. Conversely, leaders who

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encourage climate action and engage with the public can help mobilize action and build support for climate policies (Kousser and Tranter, 2018). In addition, governmental systems and institutions can influence how society responds to climate change. It is possible for authoritarian and strongly centralized governments to implement climate policies more quickly and efficiently, but they may also be less transparent and responsive. Compared to countries with more decentralized systems and more democratic governance, they might be more responsive to public opinion and more transparent in their decision-making processes. However, they may be less efficient (Burnell, 2012).

Putting it briefly, climate change can be seen as a complex interaction between government policy and regulation, public opinion, and engagement, as well as the broader social, economic, and political context of society at large. These interactions need to be understood to effectively address the issue.

DISCUSSION ON CENTRAL ASIA

Rising temperatures and diminishing precipitation are expected to negatively impact Central Asia's water resources, making it particularly vulnerable to the effects of climate change (Malsy et al., 2012). Agricultural activities in the region are also expected to be adversely affected by climate change, due to changes in precipitation patterns and temperature, which may lead to crop failures and food shortages. Central Asian countries are experiencing serious desertification since a decrease in water resources caused by melting glaciers and soil loss (Sorg et al., 2012).

In Central Asian countries as well, climate change has significant impacts, especially on vulnerable groups. In Central Asia, mountain communities face severe challenges because of their remote location, difficult access, poorly maintained infrastructure, and distinct continental climate (Xenarios et al., 2019). The decrease in water resources threatens the existence of groups engaged in animal husbandry. Additionally, having cross-border water resources in the region increases political tensions. The region has been identified as prone to water conflict in recent decades (Berndtsson and Tussupova, 2020). In the next three decades, these problems may increase conflicts in Central Asian countries and may also have severe socio-political consequences (Guo et al., 2016).

Desertification is also caused by human activities like mining and inappropriate agricultural methods (Sternberg, 2019). Therefore, Central Asia should also be discussed in terms of human activities and habits. Environmental problems are becoming more prevalent and severe in Central Asian countries due to their rapid development. In 2016, the Climate Adaptation and Mitigation Program for Central Asia (CAMP4ASIA) was launched with support from the World Bank to develop an economic model that could overcome these problems and create a common program for the region. Nevertheless, this program has been inactive in recent years.

It is predicted that climate change will trigger migration in Central Asia, a region that has great water stress. In the region, natural disasters caused by rising winter temperatures and an imbalance in precipitation are thought to have triggered economic migration (Murakami, 2020). According to research by Lukyanets et al. (2020), Central Asian countries are notably fragile to extreme temperatures,

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floods, and soil loss due to climate change. The long-term consequence of these marginal events is a serious loss in soil fertility and a threat to food security. It is worth investigating migration caused by these developments and the loss of labor related to migration from a sociological perspective.

CONCLUSION

As climate change affects many vulnerable groups and developing countries the most, it raises questions about fairness and justice. Moreover, climate change will open up the discussion of production patterns and consumption habits, which are the main causes, and individual and collective human behaviors, which are their sources. Comprehensive mitigation and adaptation policies are required to put forward a realistic response to the problem. However, the social consequences of these policies should also be considered. Furthermore, climate change has security-related dimensions. Shortage of food and degradation of natural resources can have significant reflections on regional and international relations, resulting in escalation or the emergence of new conflicts. There is no doubt that climate change would trigger migration, which also could lead to a rise in populist nationalism. The environmental movement is also a stream that has a strong presence on the political scene today. The demands of environmental movements should not be ignored by politicians or governments.

Although climate change has created and is likely to create dangers for Central Asia, the subject has not yet received sufficient attention from academic and scientific circles (Vakulchuk et al., 2022). Sociologists should study these six dimensions in collaboration with other disciplines. The theoretical depth and research methods of sociology have the opportunity to inquire about and analyze the social consequences of climate change, and to present solutions to the problems caused by climate change. This article offers six themes for Central Asian academics to use when studying climate change from a sociological perspective.

Sociologists in Central Asia should take advantage of the potential of sociology to engage in more scholarly activities and take action on an academic basis. These recommendations are for both orientations. To begin with, here are some recommendations for academic studies:

- Since it is a complex and multifaceted problem, a multidisciplinary approach is required to address climate change. For a comprehensive understanding of the issue, social scientists should work with environmental scientists, economists, and political scientists.

- The impacts of climate change on disadvantaged communities and underdeveloped countries should be studied.

- Studies on cultural beliefs and values can shed light on how public attitudes and behaviors towards climate change are being shaped. A communication and engagement strategy can be developed based on this information to encourage collective action.

- Social scientists can study the effectiveness of existing policies and governance mechanisms that address climate change.

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Social scientists can take action by following these suggestions:

● Establishing a research center or institute to study social dimensions of climate change. Scholars from a variety of disciplines can collaborate on research and study in this regard.

● Share knowledge and engage with the community by organizing and participating in conferences, workshops, and events.

● Create and implement community-based solutions to tackle the impacts of climate change in partnership with community organizations and activist groups.

● Training the next generation of social scientists and practitioners through the development of interdisciplinary educational programs.

● Enhance investment in climate science and promote evidence-based policies and solutions with policymakers.

● Disseminated research results in academic journals, mainstream media, and social media to positively affect the attitudes and behaviors of the public.

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