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#### RESEARCH ARTICLE

## Power Differentials in Carbon Emission Negotiations – A World Systems Analysis to Explore the Sociological Foundations of Climate Change Research

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#### Abstract

*In the contemporary global landscape, humanity finds itself at a pivotal crossroads, grappling with the profound and imminent threats posed by climate change. This investigation seeks to amalgamate seminal sociological insights into the sphere of climate change research, with the overarching goal of fostering multifaceted collaboration in this critical arena. Its primary objective is to present innovative perspectives that squarely address the intricate social dimensions entwined with climate change. This paper serves a dual purpose in its examination of societal perspectives on climate change. Firstly, it endeavors to provide inquisitive readers seeking a sociological understanding of climate change with an accessible and comprehensive introduction to this complex subject matter. Secondly, it embarks on a probing exploration of the potential advantages and drawbacks inherent in enhanced interdisciplinary cooperation. Within this concise overview, the concept of "incremental violence" emerges as a paramount sociological framework. This research meticulously investigates the exploitative nexus between governments in the Global North and Global South, unveiling a troubling dynamic characterized by the perpetuation of unequal climate violence, primarily affecting the latter. Employing World Systems Theory as an analytical lens, it sheds light on the persistent power differentials that exist between the Global North and South. Key theoretical constructs such as the "Color Line," "Necropolitics," and "Slow Violence" underscore the profound post-colonial dimension underpinning this relationship, offering vital historical context to the contemporary dominance of the Global North in the discourse and responses to carbon emissions. The authors posit that climate change has become an intrinsic component of the burgeoning slow violence predicament that afflicts the world. They make an impassioned call for an equitable and just approach to addressing this pervasive global quandary, emphasizing the urgency of rectifying historical injustices and promoting a collective commitment to sustainability and environmental responsibility.*

#### Keywords

*Color Line, Global North and South, Greenhouse Gas Emissions, Necropolitics, Post-Colonialism, Slow Violence, Sociology of Climate Change, World Systems Theory.*

### 1. Introduction

As the planet and its environment continue to experience unprecedented shifts, sociologists have no choice but to take note. Climate change estimates, even the most conservative ones, show that the society in which future sociologists get their degrees will be much warmer, more unstable, and wetter than the one in which we already live. Students, legislators, and academics from many fields feel this sense of urgency as they work to understand the societal

roots and implications of the climate issue and implement solutions. Yet, the field of sociology has failed to adequately deal with this vital problem despite the urgent consequences of climate change. This article examines numerous developments associated with the climate crisis, such as the escalation of natural catastrophes, the breakdown and adaption of infrastructure, migration, shifts in consumption and energy, and changes in the nature of work. It explains how sociology may help us understand the root causes of the crisis and the factors that have exacerbated it, as well as the circumstances that can bring about the required societal and cultural changes. This assessment uses the phrase “climate crisis” rather than “climate change” to convey the urgency and peril that a warming planet brings. While environmental concerns have long captured the attention of sociologists, physical, ecological, or biological explanations of human processes are generally dismissed in favour of a more socially scientific perspective.

Yet, since the 1970s, the connection between the natural world and human culture has received fresh attention. There are now specialised academic disciplines dedicated to studying environmental social movements, environmental justice, urban greening, human-animal relationships, and the worth of nature. Even Nevertheless, other issues in the field continue to take priority over these ones. This multidisciplinary equilibrium has been disrupted by the Anthropocene, when human actions altered the climate and recast geologic time. Thus, sociology has to rethink its strategy and put climate crisis research at the forefront. About a decade ago, the American Sociological Association assembled a task group of environmental sociologists to compile the field’s research on climate change. The resultant collection is the first comprehensive review of sociological research on climate change, and it draws attention to the social factors that contribute to and are affected by climate change, as well as the political and social actors and processes that are essential to solving the issue. We want to show how sociological findings and theories might open up previously unimaginable possibilities in scientific fields, policy discussions, and planning endeavours. However, our primary goal is to inspire sociologists who do not specialise in environmental issues to conduct critical reviews of the areas they do study, with an eye towards incorporating climate-related trends and identifying the connections between a shifting climate and the social structures and processes that pique their interest. This strategy would bring attention to the often-overlooked connection between social research and climate change. Hence, we agree with the claim that sociology would advance by investigating the many elements of the climate problem and urge climate issues to be integrated into sociological domains that have been sluggish to do so.

## 2. Interdisciplinary Approaches to Climate Change

Given the extent to which the climate has already changed, a separate environmental sociology is no longer viable in today’s society. Large-scale industrialization, industrial agriculture, urbanisation, and increasing consumerism are only some of the ways in which the burning of fossil fuels for power and growth has transformed the basic circumstances for all species on Earth (Lockie, 2022; Turner, 2022). The current energy system is firmly ingrained in our social structures, influencing people’s habits and behaviours all around the world.

The advantages of these systems seemed to surpass the costs of carbon emissions for many generations. Yet, the accumulated impacts of greenhouse gases have started to undermine the social environment in recent years. The atmospheric concentration of carbon dioxide (CO<sub>2</sub>) has just surpassed 415 parts per million (ppm), a record high in both recent and geologic time. If emissions are not severely regulated and renewable energy is not widely adopted, it is expected to hit 500 parts per million by 2050. This is much beyond the threshold needed to cause a 2°C rise in global average surface temperatures, which would pose a serious danger to the ecological systems that provide for human civilizations and the vast majority of other species on Earth. The evidence that the Earth was experiencing a warming trend, interrupted by bursts of extreme weather, was mounting around the start of the twenty-first century, but few sociologists grasped its implications. Yet, in recent years, there has been a rise in interest in social research on global warming due to the rising scientific agreement regarding the human origins and anticipated impacts of climate change (Davidson, 2022; Nyahunda & Tirivangasi, 2021; Sarathchandra & Haltinner, 2021). How can people, governments, and civic groups decrease emissions and encourage fossil fuel firms to do the same before the world reaches a tipping point?

This is a challenging but crucial subject that academics are currently examining. Exciting new studies are also being conducted on such topics as the relationship between climate and traditional social movements, the psychology of climate change denial, the ethics of protecting endangered species, the social implications of climate engineering projects, and the development of environmental justice in an unequal society (Falzon, Roberts, & Brulle, 2021; Haltinner & Sarathchandra, 2021; Islam & Kieu, 2021). All of these results combined suggest that in the not-too-distant future, every sector will have to address climate problems, and practically all social activity will be seen as climate action. Leading sociologists have examined such topics as labour, industrialization, class, cities, communities, ethnicity, families, and population change since the discipline’s foundation in the nineteenth century. One hundred years later, they are still vitally important, and the status of the climate stands out among new challenges in part because of the connection between them and global warming (Brulle, 2021; Nyairo, Machimura, & Matsui, 2020; Twine, 2020). Sociologists have studied natural catastrophes for decades, looking into their social roots and repercussions.

To do so entails investigating human-caused vulnerabilities and damage patterns at the personal, social, community, and societal levels (Klinenberg, Araos, & Koslov, 2020; Koehrsen et al., 2020; Miltojević & Ilić, 2020). In essence, sociologists prove that daily inequalities—including those based on race, gender, age, neighbourhood, and nationality—disproportionately affect who lives, dies, or suffers. Access to government services and the density of one’s social network are two other social variables that might play important roles. Tierney’s analysis emphasises the need to examine catastrophes in light of basic sociological themes including social inequality and gender. Her appeal for catastrophe research to go “from the periphery to the mainstream” is more urgent and possibly inescapable now than it was before the climate crisis began.

### 3. Sociological Insights on Climate Change: Challenges and Opportunities

As the Anthropocene has rendered weather artificial, sociologists' decades-long demonstrations that there is no such thing as a natural disaster are now more convincing than ever (Dietz, Shwom, & Whitley, 2020; Engels, 2020; Jamieson, 2020). This article examines the sociological literature on climate change-related catastrophic events and catastrophes, with an emphasis on how this literature might contribute to more fair efforts to rebuild homes, communities, and infrastructure. Furthermore, it demonstrates how key times in the process of making communities more resilient might reveal whether or not existing social vulnerability patterns will be perpetuated in the face of an increasing frequency of catastrophes. Puerto Rico was hit hard by Hurricane Maria in 2017; the island sits in the Caribbean, one of the world's most environmentally vulnerable and historically exploited areas. This devastating storm struck the island just two weeks after Hurricane Irma and caused significant damage and the loss of power for half of the population. At least \$43 billion in damage was wrought, including the destruction of roads and public transportation networks and the resulting shortages of food and gasoline. As many as 4,645 more fatalities were attributed to the hurricane's disruption of medical services on the island. At least 150,000 people were forced to leave the island after over 800,000 homes were destroyed or badly damaged. Maria was far deadlier than it needed to be because of daily vulnerabilities and political indifference, both of which would be highlighted by a traditional sociological perspective. Inequalities inside the United States and Puerto Rico would also be brought to light, since they contributed to the disproportionate suffering of some communities.

Questions that might be investigated by political sociologists include whether the federal government launched a relief programme and how much money was set aside for rebuilding, and how that amount compared to the amounts set aside for other states that had had similar disasters. Preliminary social science investigations of the catastrophe shed light on the disproportionate distribution of deaths caused by Maria throughout the island, with the worst effects felt in low-income areas, and on the role that existing economic, social, and political challenges had in precipitating the tragedy. The federal government's disaster response during and after the tragedy was criticised in the media for failing to preserve lives. Sociologists who study catastrophes may now examine objects of study like infrastructure thanks to research on the social difficulties of climate change (Barlett, DeWitt, Madison, Heath, Maronna, & Kirkpatrick, 2020; Liu & Szasz, 2019; McKie, 2019). One of the review's writers, for instance, has researched the Chicago heat wave of 1995 to show the importance of infrastructure in such events.

Chicago's electrical infrastructure crashed under the strain of the city's citizens and businesses turning on their air conditioners to beat the heat. Several areas reportedly had inadequate water pressure because fire hydrants were being utilised for public cooling during a heat wave. Traffic bottlenecks and ambulance delays resulted from melted train tracks and bridge plates. However, while the heat wave persisted, the city lacked a centralised method to advise residents of which emergency centres were accepting new patients. Modern infrastructure research and analysis techniques have been created by social

scientists. Where people live, how they get about, and how they interact with one another are just a few examples of how infrastructure influences society (Baragatti et al., 2019; Faiyetole, 2019; Krange, Kaltenborn, & Hultman, 2019). Women were found to be particularly hard hit by the lack of clean water in the wake of Hurricane Maria, with health issues and increased stress levels.

### 4. Slow Violence and Climate Collapse

Disaster preparedness and recovery rely heavily on social infrastructure, which influences the growth of social capital and community spirit. The concept of environmental justice is increasingly being applied to the problem of uneven susceptibility to climate change in urban areas, raising new considerations regarding urban inequality (Haltinner & Sarathchandra, 2018; Norgaard, 2018; Willis, 2018). Last but not least, a terrible reality of climate change is that countries with the largest carbon footprints are in the greatest position to defend themselves, while those with the smallest carbon footprints are ill-equipped to do so (Baker, 2018; Elliott, 2018; Fownes, Yu, & Margolin, 2018). Low-income areas in American cities are more likely to be hit by heat waves and floods, increasing the risk of illness and death for the local population. Sociologists are currently looking at how the process of creating knowledge and forecasting affects our perception and reaction to catastrophic occurrences (Davidson, 2017; Rossi, 2017; Stoddart, Ylä-Anttila, & Tindall, 2017). Researching meteorologists and the issue of being unprepared points to the need to investigate the social context of forecasting. Although adaptation is the strategy employed to advance climate security, definitional disagreements persist. Even while well-planned adaptation programmes might lessen the threat to ecosystems, they run the risk of making environmental injustice and inequality worse. The process of Puerto Rico's recovery after Hurricane Maria has opened a new window upon the reproduction of vulnerability. Unraveling the paradox and illuminating the mechanisms that contribute to replicating vulnerability and inequality on the island may be aided by rebuilding, restoring, and formalising the housing stock. The effects of global warming on people's movement and settlement habits are intricate and multidimensional (Brulle & Roberts, 2017; Longo & Clark, 2016; Martell, 2016).

While physical science indicates the diminishing terrain of habitability in its current state, the changes in human mobility and settlement patterns are unclear. Who will be allowed to stay put, who will be compelled to go, and when will communities desire to retreat? are all pressing issues that need to be addressed immediately (Dunlap, McCright, & Yarosh, 2016; Hamilton, Wake, Hartter, Safford, & Puchlopek, 2016; Knight, 2016). Migration patterns and individual decisions are influenced by a wide range of environmental influences, as shown by empirical studies. Existing societal inequalities, political and economic institutions, cultural practises, social networks, technology, and many other elements all impact the connection between climate change and human migration (Beck, 2016; Bonds, 2016; Zehr, 2015). A stronger "climate signal" in human migration is predicted given the quickening pace of consequences like sea-level rise. Compared to less vulnerable places, high-risk coastal flood zones see a greater increase in residential footprint size in the years following major storms. Due to rising rents and little relief, underprivileged communities often have to relocate after a catastrophe (Marquart-Pyatt,

Jorgenson, & Hamilton, 2015; Rosa, Rudel, York, Jorgenson, & Dietz, 2015; Wright, 2015).

### 5. The Extractive Relationship between North and South in Climate Violence

Post-disaster buyouts, made possible by government help, are a common form of this withdrawal. It is unclear, however, whether or not buyouts are helpful in resolving inequality and power relations and whether or not they have larger patterns and ramifications. It has also been shown that people with money, power, and privilege may benefit more from buyouts. For example, buyouts may worsen income disparity and environmental injustice, both of which may already be exacerbated by catastrophe consequences and response strategies. Humans, animals, and plants must adapt to new kinds of cooperation and competition as a result of climate change (Islam & Lim, 2015; Jorgenson, 2015; Liu, 2015). The mainstream migration studies see human migration as a way of adaptation, rather than a simple failure to adapt, and there is a rising concern about “stuck populations.” But, when things go worse, some individuals and communities will become unable to change their course (Dunlap & McCright, 2015; Ehrhardt-Martinez, Rudel, Norgaard, & Broadbent, 2015; Foster, 2015). In light of climate change, the rise of the Green New Deal has posed a fresh challenge to the sociology of consumption.

The carbon-intensive practises that are embedded in consumer capitalism are notoriously difficult to shift. Sociologists are investigating how people may modify their consumption habits to lessen their impact on the environment and slow global warming as the impacts of climate change become more obvious (Dunlap & Brulle, 2015a, 2015b). They are also looking at the ways in which shifting institutional and cultural definitions of consumption provide new avenues for improvement. Sociologists have found counterexamples, however, including sharing economy businesses that have not reduced their carbon footprints (and may have actually increased them). Several decades of research in the sociology of consumption have shown an important truth: most consumption is motivated by the urge to fulfil basic human needs. In order to minimise emissions and combat climate change, it is crucial to know how ingrained habits emerge, endure, and depart (Caniglia, Brulle, & Szasz, 2015; Carmin, Tierney, Chu, Hunter, Roberts, & Shi, 2015; Douglas, Koslov, & Klinenberg, 2015). To do so, we need to go farther afield than the study of “green” or “sustainable” lifestyle motivations, personal decisions, or the correlation between climate anxiety and consumer behaviour.

Alternatively, highlighting the “recruitment and defection” processes into and out of carbon-intensive behaviours is facilitated by reframing consuming as a social activity. Researchers’ emphasis is shifting away from individual consumers and towards the dynamics and prospects of communal consumption. The difference between the two methods is based on how they treat the concept of the consumer against the concept of consuming (Below, 2015; Bhatasara, 2015; Brulle & Dunlap, 2015). Research on consumers often focuses on the individual’s actions within the context of the market. To deduce why individuals choose certain foods, they examine the assumed causal relationship between attitudes and behaviour. The goal of this kind of research was to identify the factors that influence customer behaviour. Climate change presents a new issue for the

sociology of consumption because of the need to alter long-held practises in order to successfully cut carbon emissions and adapt to a changing environment (Antonio & Clark, 2015; Arnold, 2015; Beck, 2015). Scholars are investigating the potential for collective action by recasting consuming as a social practise that examines how customary habits might be changed. But, in order to disclose the drivers of consumer behaviour and to influence that behaviour, it is necessary to go beyond an analysis of the assumed causal relationship between attitudes and conduct. In the long run, our effort will be essential in solving the climate issue and creating a better world (Garai, 2014; Mulligan, 2014; Thorpe & Jacobson, 2013). Several sociological studies have cast doubt on the idea that people’s purchasing decisions have no impact on the norms and customs of society.

### 6. Mitigation and Adaptation Proposals for Climate Change: A Sociological Critique

Researchers are questioning the extent to which individuals are free to make decisions and the impact that societal norms and institutions have on people’s actions (Bradatan, 2013; Stampnitzky, 2013; Young & Dugas, 2012). Collective social behaviour in the consumer sectors of housing, transportation, and food cannot be completely described by individual choice. In order to understand how norms and institutions shape behaviour, scholars are examining the socially conditioned actor. According to the available empirical evidence, abandoning high-carbon social behaviours does not need significant personal sacrifice or austerity on the part of the individual. Yet, it may have unintended consequences, such as improved social trust and a more equitable allocation of resources (Mayer, 2012; Smith, Anderson, & Moore, 2012; Webb, 2012). One of the most promising policy options for cutting emissions without hurting the economy is shorter workweeks. Carbon emissions are strongly positively correlated with average national workweek length. Although reducing working hours will likely result in lower income, there may be positive side effects for one’s quality of life, such as increased levels of subjective well-being and happiness. The increased amount of free time is one of the greatest social advantages of reducing working hours. Evidence suggests that leisure time may give birth to low-carbon forms of group spending for pleasure, even when time-rich families may participate in more environmentally costly activities like far-flung travel.

The empirical studies demonstrate that there are co-benefits to defecting from high-carbon social behaviours, and that reducing working hours may lower emissions without negatively impacting employment. Low-carbon social consumption may emerge from leisure time, as shown by historical examples like Vichy France. National policy changes may open up new avenues for low-carbon, communal consumption that doesn’t need compromising on taste. Case studies from a variety of industrialised countries show how people and organisations have rethought their daily routines in order to lessen their environmental impact, increase fairness in the allocation of income and resources, and strengthen local trust via more face-to-face encounters. Social movements have helped bring about these changes by influencing the local institutional and cultural frameworks to encourage a transition away from carbon-intensive behaviours (MacBride, 2012; Wainwright, 2011; White, 2011). A new economic paradigm has emerged with these grassroots movements at its centre, one that places a



premium on the normative importance of fair and equitable social connections. To strengthen local trust and democracy, proponents of this paradigm are committed to decentralising the ownership and administration of economic and ecological assets and supporting the wide distribution of talents. This discussion is grounded on the idea of plenitude, which suggests that individuals may alter their lifestyles to improve ecological harmony, social justice, and communal well-being. Cutting down on hours spent toiling is a cornerstone of this strategy; it highlights the diversification of risk from an increasingly low-wage and insecure job setting while also allowing workers to break away from the alienating labour relations of the modern economy (Rohloff, 2011; Salleh, 2011).

### **7. The Postcolonial Character of the North-South Relationship in Climate Change**

Recognizing that certain attempts to reform social behaviours and ameliorate climate change via institutional and cultural transformations may have little impact on carbon emissions or may even increase them is essential. It is just as important to study unsuccessful efforts at reducing emissions as successful ones (Antonio & Brulle, 2011; Gines, 2011; McCright & Dunlap, 2011). For instance, there is no proof that the sharing economy has reduced consumption or emissions by encouraging the sharing or rental of existing products and services rather than the production of new ones. As an example, some academics claim that Airbnb encourages long-distance travel since its cheap prices on lodging force people to fly further to their destinations than they otherwise would. In addition, the shared economy has not delivered on its promised social advantages. For instance, Airbnb promoted gentrification of low-income communities despite its promise to give customers with more social possibilities. A comparison with the growing body of sociological study on emission reduction and urban sustainability via greater housing equity, cooperative consumption, and “democratic ecologies” is illuminating (Alston, 2011; Urry, 2010; Vinck, 2010). Built density, extensive public transit networks, and knowledge-intensive, high-tech enterprises all contribute to post-industrial urban centres’ relatively tiny carbon footprints, which city officials are quick to point out. This language, however, hides the fact that these urban centres are dependent on polluting activity outside of their borders.

Data centres that store information in the cloud account for 2% of worldwide emissions, a number that is anticipated to increase over the next decade as cloud computing becomes more widespread. Most carbon accounting techniques ignore or under-measure consumption, and they outsource the tally of emissions to locations outside of urban areas. Carbon counts often only account for emissions from transportation and electricity generation inside a city, ignoring the entire life cycle of emissions for all commodities and services consumed. It is conceivable that rural landscapes will be altered to take use of wind and solar energy if and when civilizations experience rapid decarbonization (Reusswig, 2010; Shove, 2010a, 2010b). Whether renewable energy production may follow the same exploitative political and institutional patterns as coal, oil, and gas, or it might take a different route, the character of the transition will be crucial. International investors and federal authorities have been given preference in the construction of large-scale renewable energy projects in southern Mexico, while local concerns about cultural and environmental repercussions have

been largely ignored. Displacement has occurred as a consequence of hydropower projects that involve extensive land utilisation, and similar outcomes might occur with unproven geoengineering activities. There is a risk of community pushback against renewable energy projects since they often use exploitative structures developed during colonisation (McCright, 2010; Molnar, 2010; Nerlich, Koteyko, & Brown, 2010).

### **8. Slow Violence and Surplus Climate Violence: A Global North-South Divide**

Sociologists might, for instance, investigate the institutional and policy factors, religiously entrenched moral norms, and cultural importance of “hard labour” that contributed to the normalisation of the 40-hour workday. Researchers might also examine the changes in public policy and popular understanding that have made shorter workweeks feasible in countries like Germany. Sociologists may look at the prevalence of ineffective air conditioners and other home equipment, as well as poorly insulated buildings that contribute to lethal heat waves, to see whether there is a connection between these phenomena and problems in the workplace. Sociologists should pay less attention to individual consumers and more to institutional environments as places of study and action. As the climatic catastrophe reshapes modern society and unleashes fresh waves of social issues, sociology will need to integrate socioecological concerns within its traditional domains (Jasanoff, 2010; Karami & Keshavarz, 2010; Lever-Tracy, 2010). The only issue is whether this will happen fast enough for students, scientists, and politicians to use the pitch in their quest to comprehend the interplay between climate change and human existence.

The climate problem will have far-reaching effects on all branches of social science. Although fundamental problems will always be the impetus for theoretical study, the mission of inquiry for the sake of discovery will continue to fade into the background. makes little sense in the context of a global climate catastrophe in which human beings are fighting for the survival of the species (Dunlap, 2010; Grundmann & Stehr, 2010; Jasanoff, 2010). There are massive fires raging throughout the Arctic tundra, producing methane that boosts the warming potential of carbon dioxide, and the melting of Greenland’s enormous ice sheets poses a serious danger to drastically raise sea level rise. If environmental repercussions forecast for mid-century are already being felt, sociologists in 2050 will have a lot to analyse. It is obvious that people will not be able to make their own decisions on how to combat climate change. The state, whether on a local, regional, or national scale, will have a major influence in defining people’s opportunities. Individuals’ carbon footprints may be significantly impacted by how they choose to generate electricity, heat their homes, and organise their communities, as well as by the amount to which these choices translate into substantial changes in the greater environment. The state will be a major player in determining the outcome of this situation (Beck, 2010a, 2010b; Carolan, 2010).

### **9. The Colour Line and Climate Change**

Sociology, in the wake of Wright’s Real Utopias project, may play a pivotal role in not just documenting but also em-

phasing difficulties that occur in response to the climate catastrophe. One way to do this is to show how communities can gain control over decisions related to settling while ecological change is occurring; another is to show how states and societies reduce carbon emissions; a third is to show how lessons learned from disasters or social movements can inform more equitable rebuilding and resilience efforts. Sociology should utilise its critical traditions to look at cases of fraud and failure, such as when fossil fuel companies use ecological jargon to justify carbon-intensive energy systems or when sharing economy businesses make exaggerated claims about their ability to reduce environmental damage (Urry, 2009; Yearley, 2009). The sociology of climate change, in whatever form it takes, has the potential to help nations and communities find equitable and low-carbon alternatives to the systems that have come to define the contemporary world. If it does not, then the discipline has failed.

There was a period when environmental sociology was considered an anthropocentric field of study. Its original aim was to include ecological or biophysical factors into social science experiments. Since then, many studies have taken a similar tack, and for over 40 years, environmental sociologists have been examining the links between ecological variables like CO2 emissions and air pollution and social and economic outcomes like income, GDP, and health as part of the field's mainstream research (Carter & Charles, 2009; Hulme, 2009; MacGregor, 2009). These studies have been rigorous and necessary for a better understanding of the co-constitution of environment and civilization, but they have fallen short when it comes to providing solutions to the climate catastrophe. Despite the fact that several disciplines can provide light on the topic of climate change, they have not yet done so. This is a setback for sociology and for all those who care about the state of the world today. And we all need to do it because of how much is at risk. The effects of climate change are felt across all socioeconomic and political divides (Anderson, 2009; Nagel, Dietz, & Broadbent, 2008; Urry, 2008). Researchers and policymakers have an uphill battle in their efforts to coordinate and create effective ways to reduce the implications of this issue because of its complexity and breadth. The growing severity of the situation and the failure of the existing solutions have added new urgency to the situation (Brechin, 2008; Dietz, Dan, & Shwom, 2007; Lever-Tracy, 2008). It will need a comprehensive approach to climate change problems to solve them all. In order to make significant headway in the fight against and adaptation to climate change, it is essential that research objectives and policies be framed and coordinated.

### 10. Necro-Politics and Climate Collapse: An Analysis of North-South Relations

There has not been a deliberate attempt to link the many pieces of climate change research, despite the fact that researchers from many fields have made important contributions. Hence, a coordinated, multidisciplinary strategy that can integrate existing knowledge and prevent the intra-disciplinary tunnel vision that presently exists is required to solve the issue successfully (Adger, 2006; Clark & York, 2005; Fisher, 2006). The sociological literature on climate change is vast, but it is poorly integrated and has had few cross-disciplinary conversations. Natural science research has long dominated the field of climate change, therefore social science has been relegated to

the background until recently. Our ecological imagination in regards to climate change has come a long way thanks to the scientific community, but our social imagination still has a ways to go. We need to reframe four basic concerns in order to have a fruitful multidisciplinary dialogue about climate change: why climate change is occurring, how we are being affected, why our responses have been ineffective so far, and how we may be able to react effectively (Brechin, 2003; Rosa, 2001; Wilenius, 1999). Despite this, there's a rising school of thought that says natural sciences are not enough to tackle the complex dynamics and obstacles of climate change. The importance of incorporating findings from the social sciences is now well recognised. Embedded problems in institutions, cultural ideas and values, and social behaviours are the fundamental cause of global climate change. As a result, climate change is undeniably an issue of social significance. The field of sociology has plenty to offer both in terms of cross-disciplinary work and subject-specific concerns involving socio-structural processes (Rosa & Dietz, 1998; Shackley & Wynne, 1996).

By delving into the topic from a sociological perspective, climate change research benefits from two new angles. First, sociology may investigate the factors contributing to climate change as well as its effects and potential responses. Efforts to mitigate or adapt to its affects need an understanding of the social dynamics at many sizes, from the global to the small. The field of sociology has plenty to offer both in terms of cross-disciplinary work and subject-specific concerns involving socio-structural processes. Second, sociology offers a critical perspective by challenging the assumptions that underpin the established order in society and the economy (Bohle, Downing, & Watts, 1994; Crenshaw & Jenkins, 1996; Downing, Watts, & Bohle, 1996). To better understand how hegemonic ideas like these serve special interests and limit policy alternatives, it helps to critically examine the prevailing ideologies that have come to dominate society. An interdisciplinary strategy that incorporates multiple disciplines, including the social sciences, is necessary to handle the complex dynamics and difficulties of climate change.

### 11. Climate Change as a Driver of Slow Violence

Reducing and coping with the effects of climate change requires an all-encompassing plan that incorporates current knowledge and avoids intra-disciplinary tunnel vision. Examining the social aspects of climate change and shedding light on its origins, repercussions, and potential remedies are all important contributions that sociology can provide to the field (Haltinner & Sarathchandra, 2018; Longo & Clark, 2016; Stoddart, Ylä-Anttila, & Tindall, 2017). In addition, sociology may serve as a type of social criticism by illuminating the limitations of hegemonic concepts that support the status quo of socioeconomic institutions and practises. Human actions that generate greenhouse gases are the primary driver of climate change (GHGs). Population increase and consumerism are the key drivers of environmental stresses like greenhouse gas emissions. The theoretical opposites present in the development-environment continuum are best shown by two key theories: the Treadmill of Production (TOP) and Ecological Modernization Theory (EMT). Capitalism, according to TOP's supporters, puts profit above concerns like reducing income disparity and protecting the environment. Many say this obsession with economic expansion is to blame for the state of the planet

today. Opponents of EMT, on the other hand, argue that protecting the environment isn't a priority for developing nations, but that this will change as they modernise. The declining rates of environmental damage and greenhouse gas emissions in industrialised countries seem to provide credence to EMT.

Yet closer inspection indicates that industrialised countries have exported the impacts of their environmental concerns to less developed countries. This has resulted in what Salleh calls a "metabolic rift," which, in the name of economic maximisation, undermines the metabolism of people and environment. There is inequality and inequalities across countries because the method of production has affected the manner in which governments seek development. Countries with less economic development worry that they won't be able to fulfil their own demands if international constraints on their economic growth are imposed. But, industrialised countries, which account for 60% of GHG emissions, have shown little inclination to reduce their own output. Because of this, developing countries are less likely to make environmental sacrifices. By bolstering the structuralist worldview and political pluralism, global inequality hinders joint efforts and erodes trust between states. Robert and Parks argue that if global inequality is not addressed, it might lead to a worsening of the current policy deadlock in the international arena. Ecologically unequal exchanges and the transnational organisation of production are two aspects of the global capitalism economy rife with power and resource imbalances that are made clear by this phenomena. In reality, economies and political systems may be found anywhere along a continuum that includes both TOP and EMT. The complicated linkages between economic growth, environmental deterioration, and global inequality are shown on the development-environment continuum.

In terms of the environment, market organisations have been both actors and objects of broader forces, whether through adding to environmental degradation or reducing climate change dangers (Baragatti et al., 2019; Dietz, Shwom, & Whitley, 2020; Falzon, Roberts, & Brulle, 2021). Market organisations' decisions may be affected by internal dynamics, external economic pressures, or government intervention, as pointed out by Perrow and Pulver. In spite of this, attempts to reform businesses' environmental policies have been hampered by the market organisation economics that allows environmental degradation. While Ehrhardt-Martinez et al. analysis had limitations and poorly addressed the many dimensions of family consumption, they did find a substantial body of literature on the consequences associated to emissions from consumption. Carbon and greenhouse gas emissions may rise as a result of individual households' usage of energy, food, transportation, and other lifestyle choices. Yet present climate policies have ignored the importance of homes and people, instead recommending changes to economic policy and education as a means of creating market incentives. The reports and studies haven't addressed household consumption enough, and they haven't considered the indirect effects of consumption. It is well recognised that existing social and cultural norms provide obstacles to mitigation on a family level.

Researchers and policymakers may get a deeper understanding of the human factors that influence mitigation and adaptation methods if they take these socio-structural constraints into account. Incorporating social constructs and agency in decision making, as well as exploring aspects like status,

identity, and lifestyles together with the habitual or routine practises of consumption patterns, sociological insights could improve our current understanding of individual decision-making processes (Islam & Kieu, 2021). Long-term, this might guide efficient strategies to lessen consumption's influence on global warming. Individuals' purchasing patterns have had major influence on climate change, especially when motivated by the pursuit of social status via conspicuous expenditure and leisure activities. A feeling of climatic injustice has resulted from this consumption pattern, which rests on three presumptions. First, overconsumption is a direct result of socioeconomic inequality. Second, there has been a disparity between the wealthy and the poor in how they have felt the effects of climate change. Finally, the effects of climate change measures have been uneven for the poor and the voiceless.

## 12. Exploring the Sociological Foundations of Climate Change Research

Researchers and policymakers need to be aware of wealth, power, and privilege gaps if they are to comprehend the causes and effects of climate change. The concept of inequality now encompasses not only the rich-poor divide inside countries, but also that which exists between them. Toxic and polluting companies have historically been situated in economically depressed areas inside countries because these areas are seen as having lower property values. Ecologically unequal trades have also occurred between countries as a result of resource theft and pollution from externalities of production. Many reports have stressed the significance of racial, socioeconomic, and chronological gaps in opportunities and outcomes. In addition to considering how climate change exacerbates the consequences of preexisting drivers of vulnerability, policy and response strategies must also account for how climate change contributes to vulnerability (Davidson, 2022; Mayer, 2012). Short-term, the most significant effect on the poor and vulnerable has come not from climate change but from the unintended negative outcomes of climate change policies. This has prompted attention to the social elements of the climate change agenda, in addition to the need to examine vulnerability in the context of climate change and the consequences of policy. They, in turn, have had direct connections to climate change and policy outcomes. As various groups of people have felt the effects of climate change in different ways, rethinking policies with justice in mind may need focusing on ways to improve the adaptive skills of those who have suffered the most. An integrated socio-ecological approach, "just sustainability," and "plural environmental governance" have all been advocated by sociologists as means to create a new social paradigm that prioritises environmental sustainability without sacrificing human rights or diversity.

In order to adapt to climate change, it is necessary to lessen its negative consequences, such as natural disasters, shifts in average temperatures, and effects on food security, economic stability, and health. Some communities are more susceptible than others, so it's important to think about their exposure, sensitivity, and adaptive potential. Those who spend a lot of time alone tend to be less resilient to the effects of their surroundings. There are a number of structural, institutional, and social choices for lowering vulnerability and raising adaptive capacity, and these are the three primary avenues for adaptation. Understanding the dynamics of social institutions is essen-

tial, and sociological studies and other social sciences have shed light on the means by which adaptation objectives might be attained (Klinenberg, Araos, & Koslov, 2020; McKie, 2019; Milojević & Ilić, 2020). Developed or “core” countries have participated in unequal exchanges of labour and natural resources with impoverished “peripheral” states, and this has persisted throughout history, as shown by world systems theory. This exposes the inherent power dynamics and self-interest in international relations. Efforts to combat climate change have been both aided by and hampered by fundamental societal issues, such as vulnerability and conflicts between entities with divergent self-interests. Effective adaptation techniques need knowledge of the political economy and developmental trajectories, as described by Carmin et al. It has been argued that current approaches to climate change mitigation are inadequate because they prioritise technology fixes above the possibility of broader societal and cultural changes.

The importance of social structure and culture in reducing greenhouse gas emissions has been overlooked in reports by groups like the Intergovernmental Panel on Climate Change and America’s Climate Choices. Several important factors are ignored in these studies, including governance, power dynamics, political participation, labour legislation, and consumer spending. It would be a mistake, however, to minimise the role of social psychology and social movements in influencing policy via the agency of individuals and the power of groups. Individuals, communities, nations, and even the whole world have all experienced social transformation. Ehrhardt-Martinez emphasised the possibility for individuals and families to take action by decreasing their own emissions and altering their consumption patterns, so serving as a role model for others and inspiring social movements and modifications to governmental processes. Organizations, businesses, and local governments at the meso level have some influence over mitigation measures, especially in political and economic circumstances, via their networks and working environments. Gathering resources to develop interorganizational coalitions may help challenge environmentally harmful industrial practises and establish a precedent for changing such norms (Bonds, 2016; Dietz, Shwom, & Whitley, 2020; Longo & Clark, 2016). Global standards and the institutionalisation of cultural models have also affected international policy and their ramifications.

To effectively combat climate change, international cooperation is essential, since accords have a better chance of being ratified when powerful governments work together to foster a worldwide culture of environmentalism. Yet, a significant barrier has been the pushback from nations when environmental activities are seen as threatening to their economic goals. Neglecting ecological problems or responding with empty symbolism to climate change would have disastrous long-term implications. The “tragedy of the commons” may occur if people start competing with one another for resources in a “race to the top.” Fighting environmental problems requires addressing inequalities. First, the poor and vulnerable have borne a disproportionate share of the world’s suffering. Second, the less developed and poorer countries have had less leverage in negotiations. Finally, tackling global inequality is necessary for reaching an effective climate accord, as seen by the failures of the Kyoto Protocol and the Copenhagen Accord. Movements on a national and international scale to address climate change have been recognised as an essential component of broader efforts to effect positive social transformation (Baragatti et al.,

2019; Haltinner & Sarathchandra, 2018; Liu & Szasz, 2019). Studies in sociology have shown that citizen mobilisation occurring beyond the realms of the market and government may be a powerful catalyst for social change. The Intergovernmental Panel on Climate Change (IPCC) has acknowledged the significance of civil society interactions by noting that such movements may alter policies via policy lobbying, policy research, and the creation of political spaces for changes.

### 13. Sociological Approaches to Climate Change: An Interdisciplinary Agenda

Movements in response to climate change have contributed significantly to the effective framing of complaints by offering descriptions of issues, assigning blame and duty, and investigating potential remedies. Yet, attempts to mobilise have fallen short in the absence of the mobilisation of human and financial resources for social transformation, including the introduction of novel institutional frameworks and international regimes. Top-down tactics, often headed by established institutions, have also contributed to change. But, these methods have a history of favouring the affluent and powerful, who have used their resources to sway public opinion and gain political clout. Yet, movements and political possibilities have often fared better or worse depending on the broader sociopolitical climates in which they emerged and developed (Dunlap, McCright, & Yarosh, 2016; Martell, 2016; Rossi, 2017). The public’s acceptance of the reality of climate change has been a major element in shaping the reaction of society. Sociology has attempted to explain how public opinion may be impacted by the greater multidimensional forces of social, economic, cultural, political, and environmental issues, while psychology has found a significant psychological component to climate change views. All sorts of problems, convictions, attitudes, perceptions, ideas, and worries fall under the dynamic and differentiated umbrella of these multifaceted elements. More and more people are concerned about climate change and generally favour programmes that have addressed climate change and its attendant challenges, according to recent surveys.

Consistent predictors of climate change opinions have included environmental concerns, impacted by gender and political orientation, whereas age and education have been less constant. Theories like gender socialisation, post-materialist values, cultural theory of risk, and values-beliefs-norms have all developed from these research in an effort to provide an explanation for this occurrence (Knight, 2016; Liu, 2015; Wright, 2015). While social psychology theories point to the individual level as the source of public disagreement, media coverage and the perceived urgency of the climate change problem may have substantial effects on public perceptions and hence on public opinion. Wars, unemployment, and economic booms have all competed with climate change for public attention. More crucially, climate change topics have periodically been polarised, which has tended to impact public opinion. To keep public support strong in the face of competing messaging campaigns, Habermas argues, constant public communication is essential. While there is broad consensus on the harmful impacts of global warming and climate change, a unanimous decision has not yet been made. The anthropocentric worldview, which sees nature as a resource created by humans for their own benefit, is at the heart of the climate change denial movement (Douglas, Koslov, & Klinenberg, 2015; Dunlap & McCright, 2015;



Jorgenson, 2015). The capitalist-driven Industrial Revolution and scientific and technological progress have intensified this viewpoint. Growing concern about climate change has coincided with the spread of neoliberalism and the deregulation of global markets.

Conservative groups and those with industrial neoliberal goals have emerged as the primary opponents of climate change policies. These interest groups have utilised the “second dimension of power” to shield their political and economic interests from climate change initiatives rather than actively opposing them. They have used tactics like “creating uncertainty” to cast doubt on the veracity of scientific studies and raise questions about the accuracy of the methods and results. By capitalising on the intricacies of scientific enquiry, contrarian scientists have played a crucial role in creating doubt. The legitimacy of climate change has been attacked, and the credibility of scientists and scientific organisations has been called into question. Apart from the scientific community’s denial, media, legislators, and advocacy organisations have banded together to fight back against international and national advocacy networks. Human activities and their associated production and consumption patterns are major contributors to climate change (Bhatasara, 2015; Brulle & Dunlap, 2015; Dunlap & Brulle, 2015b). Its immediate causes are rooted in more complex social and environmental factors, such as regionally distinct economic, technological, cultural, and governance systems and societal values, ideals, and material interests. Because of the breadth and depth of the problems posed by climate change, social theories have drawn from a wide range of disciplines to formulate solutions. The “human exemptionalist paradigm” and the belief in a neoliberal growth imperative, both of which imply that human society can transcend biophysical boundaries and flourish economically without restrictions, have given place to other theories like the “new ecological paradigm.” But, in the long term, the correlation between economic expansion and social progress cannot be maintained.

The new ecological paradigm takes into account the cultural and natural contexts in which human societies operate. Educating policymakers on the biophysical effects and limits of human growth is a crucial part of environmental sociology’s mission (Beck, 2015; Mulligan, 2014; Young & Dugas, 2012). According to Kais and Islam, environmental sociology has an obligation to inform the public about the negative effects of human activities on the planet and to encourage government officials to take measures to remedy the situation. In conclusion, there are still communities that reject the scientific consensus on climate change and actively work to undermine efforts to combat it. The disagreement stems from anthropocentric values embedded in the production and consumption systems. Climate change may be tackled with the help of social theories like the new ecological paradigm, which takes into account the larger social and environmental factors that drive climate change and acknowledges the interconnectedness of society and nature. Awareness of the effects of human activities on the environment and the need for politicians to address these issues are both greatly aided by the work of environmental sociologists. There has to be a multidisciplinary effort to tackle climate change and associated problems. As Chen, Boulding, and Schneider have argued, it is crucial to stop asking “what if” and start asking “so what” when considering how to lessen the impact of climate change. In addition, they have stressed the need for inquiries to be geared towards furthering

appropriate actions and the sluggish and unpredictable nature of scientific study.

#### 14. Beyond the Natural Sciences

Climate policy have benefited from sociology’s investigation of the social processes that have moulded scientific issues, methodology, applications, and concerns about science’s legitimacy. Because of their cumulative impact on climate change and environmental sustainability, contemporary social theories have also been taken into account, such as globalisation and the ecological crisis. Realistic involvement with ecological concerns, according to sociology, necessitates recognising that human civilizations are integrated within and constrained by our biosphere (Gines, 2011; Salleh, 2011; Smith, Anderson, & Moore, 2012). Yet, sociological methods have been criticised for focusing too much on the global politics of inequality and being too nebulous on concrete acts. Resource dependence is an issue that Urry claims sociology has ignored. Resource dependence is inextricably linked to the structure and networks that impede our capacity to lessen human influence on climate change. This is because societies have developed social systems that have been unable to successfully shrink their existing dependent on high GHG emissions. Problems with structures and networks call for coordinated responses, and knowledge acquisition occurs in an ongoing study process. Further insights into the social and human dimensions of climate change may be gained with the help of sociology. Dunlap and Brulle have pushed for a more holistic multidisciplinary strategy to adapt to and lessen the effects of climate change.

To tackle climate change in a fair and equitable way, it is essential to get a deeper knowledge of institutional or cultural factors at different levels. To realise the full potential of the social and natural sciences working together, however, researchers and policymakers must be on the same page. In conclusion, the critical difficulties posed by climate change and associated concerns need an interdisciplinary approach. Examining the social processes that have formed scientific challenges and concerns about the public’s trust in science, sociological techniques have made a contribution to climate policy. Yet, issues of reliance on scarce resources and on weak structures and networks need greater study (Jasanoff, 2010; McCright, 2010; Reusswig, 2010; Rohloff, 2011). Policies and practises for reducing and adapting to climate change might be greatly improved with the help of insights gained by combining the social and scientific sciences. New evidence suggests that colonisation directly contributed to existing global inequalities. In particular, resource exploitation has resulted in unbalanced ecological exchanges, which have enriched the North immensely at the expense of the South. Climate change is a “threat multiplier,” raising the chances of violence and food shortages for people already disadvantaged by environmental inequality. The racially motivated “economic (dis)order” predicated on “extraction and accumulation via dispossession” is also seen as a cause of climate change.

#### 15. Climate Violence

Lack of urgency in climate action has been noted by researchers. These occurrences prompt inquiries of who and what is worth protecting, and at what cost, and who and what

may be sacrificed to maintain the status quo of politics and economics. These inquiries raise the possibility of a “politics of death,” which has captured the interest of experts from many other fields, including law, human rights studies, and history and politics. Several studies echo these worries by drawing connections between climate change and systemic violence and misery. The worst of climate misery is probably yet to come, despite our present attempts to mitigate its effects. Whether or if the global community acts to combat climate change, climate-related misery will continue. Most of the sociopolitical and economic inequities that cause misery for poor and disadvantaged people are either undetected or neglected on a global scale (Beck, 2010b; Dunlap, 2010; Urry, 2009). As a result of climate change, many different forms of violence have emerged, all of which fall under the umbrella concept of “climate violence”. There has been limited study on climate violence, but much of it has focused on how climate change contributes to existing conflicts. The impact of climate change on resources, which may lead to conflict, is only one example of the direct repercussions of climate change on communities, according to this narrow definition of climate violence. This perspective fails to take into account the potential for climate violence to take the shape of non-conventional violent acts. When renewable energy initiatives in the Global South result in land expropriation and the disruption of livelihoods for underprivileged populations, climate violence may result.

The term “climate violence” refers to one kind of climate injustice, while “climate justice” refers to an approach that “unpacks the systems that feed climate pain and provides ways to alleviate these diverse types of suffering,” as a result of climate change. Responses to climate change that identify and combat the inequities that fuel the problem are emphasised by the critical literature on climate justice. The importance of both state and non-state actors in achieving climate justice is therefore emphasised. Inequality is exacerbated by climate change impacts, which are highlighted by multi-scalar frameworks. These models provide for non-Western perspectives on climate justice by including “intergenerational, multispecies, and intersectional” notions. This conception of climate justice takes into account the interplay between socioeconomic status, racial identity, gender identity, age, and geographical location (Anderson, 2009; Lever-Tracy, 2008; Yearley, 2009). Climate violence is a broad notion that includes all types of violence caused by climate change. Although much of the existing literature on climate violence has concentrated on its connection to conflict, this framework ignores the ways in which climate violence may be perpetuated via non-traditional forms of violence, including through widely accepted climate solutions. Climate justice is a strategy for understanding the root causes of climate-related harm and developing effective responses to it. Addressing the disparities that fuel climate change is central to the critical climate justice literature, which also includes non-state actors. Including ideas that reflect non-Western understandings of climate justice, multi-scalar frameworks acknowledge the intersecting causes of inequality and experiences of climate change.

Social, racial, gendered, generational, and geographical factors all overlap in the pursuit of climate justice. While the disparities between the Global North and South have deep historical origins, they became even more ingrained in the global order as a result of the industrial revolution. Post-World War II output surged as technology replaced human labour, necessitat-

ing more energy and thereby accelerating the depletion of natural resources. The term “Anthropocene” refers to the current geologic epoch, which was ushered in by the rapid rise in human carbon emissions in the twentieth century. Capitalism’s incessant drive for expansion has created a “treadmill of production” in which state actors prop up non-state players whose boundless quest for profit destroys the natural world. Degradation of the environment, industrial waste, and human exploitation have all been concentrated in the Global South because of the contaminated and inhospitable environments (Brechtin, 2003; Clark & York, 2005; Fisher, 2006; Urry, 2008). Companies in the North often moved their operations to the South because of lower labour costs and laxer environmental regulations. This led to exacerbated environmental degradation and climatic disparities throughout the Global South. According to Beck, industrial civilizations face these environmental hazards alongside modernization and technological and scientific advancements. According to Beck, distributional logics are shifting from money to risk, and the latter are not confined to any one place but rather cut across national boundaries. Many nations’ carbon-emitting sectors are located in their centres, while their peripheral residents face varying degrees of climatic catastrophe. Often, “toxicity” or higher emissions are downplayed as “externalities” when discussing environmental issues.

Degrading techniques of environmental withdrawal like energy extraction and additions like toxicity and greenhouse gases, thus, result in environmental and climatic disparities. Due to the Global North’s persistent emphasis on profit and accumulation, developing nations are constantly exposed to an excess of climatic violence. Resource scarcity, loss of livelihood, and land dispossession are all examples of this kind of violence. When renewable energy projects in the Global South cause land dispossession and disturb the lives of underprivileged populations, they are examples of the less conventional forms of violence that contribute to the perpetuation of climate change. Addressing the many causes of climate-related human suffering requires a commitment to climate justice (Bohle, Downing, & Watts, 1994; Shackley & Wynne, 1996; Wilenius, 1999). The critical literature on climate justice stresses the need of providing solutions to climate change that identify and address the injustices that contribute to the problem. Central to the concept of climate justice are both state and non-state actors. We need multi-scalar frameworks that focus on the interplay between the causes of inequality and people’s lived experiences of climate change. Non-Western perspectives on climate justice are reflected in these frameworks via the incorporation of “intergenerational, multispecies, and intersectional” notions. In conclusion, environmental and climatic disparities that disproportionately harm the Global South have resulted from capitalism’s drive of economic expansion and profit. The idea of climate violence goes beyond the common understanding that climate change causes war, drawing attention to the many other ways in which climate violence is sustained.

Assigning blame and resolving inequities that contribute to climate change are essential components of climate justice. It is imperative that we react to climate change using multi-scalar frameworks that account for new forms of colonialism and include intersectional notions. Sociologists have long been interested in the dynamics between resource-rich developing countries and the more developed, militarily dominant countries that exploit them for profit. African onlookers could clearly distinguish the brutality that defined the internecine fighting

of World War I in Europe from the violence that characterised the colonial wars of the nineteenth century, and Du Bois was well aware of this connection. These ties to previous colonies, which Du Bois called “the colour line,” were fundamental to the development of Europe and the United States. The prejudice against and justification of slavery and Western European systems of control over “darker countries” were made possible by the social creation of race. Racism sometimes begins as a violent act of imposition and is later legitimised by ideology. Here, racism may take root and flourish in institutional settings that foster its further propagation. Karenga blames organisations like the World Bank, International Monetary Fund, and World Trade Organization for upholding a global order that benefits white countries at the expense of people of colour. Karenga criticises what she calls the “Europeanization of human culture and its consciousness,” which she says erases and devalues the expertise and perspectives of non-Western nations and their citizens. Said’s portrayal of the Orientalizing professors who accompanied imperialist armies is reflected in this priority of European epistemology and Western extractivism. These academics portrayed natives of freshly conquered lands as a static, foreign “Other” in need of civilising. Indigenous peoples’ stories of coping with the effects of climate change have been mostly ignored by mainstream academics and politicians in the world’s wealthiest countries.

## 16. Limitations

The scope of this study work is extensive; yet, it is important to recognise its limits. Both practical and theoretical constraints contribute to these shortcomings. Problems with the study’s methodology, such as those with its design or data collecting, might have influenced its findings. The utilisation of secondary sources for the study is the first methodological shortcoming of this work. Much of the information was gleaned from published works, which can have their own biases and limitations. While care was taken to choose credible sources, there is a chance that some of the information included is incorrect or incomplete. Another shortcoming of this article is its failure to do any empirical data analysis. While this research provides a theoretical foundation for appreciating the sociological viewpoints on climate change, it offers no hard data to back up its claims. In order to put the theoretical claims made in this study to the test, future research may expand upon this framework by doing empirical experiments. Thirdly, it may not be representative to generalise from the Global North and Global South. The report recognises the effect of this unequal distribution of power and resources on global warming. Unfortunately, this report did not examine all of the places and nations that might be impacted by climate change.

Problems in the theoretical underpinnings of the study make definitive judgements about the data difficult to draw. This paper’s over-dependence on Global Systems Theory as its theoretical backbone is one of its flaws. While this hypothesis sheds light on the differences in power between the Global North and South, it may not work in all settings. Future study should investigate other theoretical frameworks including Critical Race Theory, Feminist Theory, and Actor-Network Theory to further understand the sociological stances on climate change. The failure to account for unique contributors’ perspectives and actions in shaping responses to climate change is another gap in the theory. The research focuses on macro-level

influences on climate change, such as economic systems and political power dynamics, but it doesn’t dive into micro-level influences like personal values and beliefs. A comprehensive knowledge of the sociological viewpoints on climate change can be achieved by future study into these individual-level elements and their interaction with structural issues. Furthermore, the paper’s narrow focus represents a theoretical handicap. While this study does a good job of summarising the sociological literature on climate change, it does not address every facet of this complicated topic. Expanding on this work, future studies might investigate how climate change affects social inequality and justice from a variety of sociological viewpoints, such as the role of social movements and civil society in resolving the issue. This study concludes with a critical examination of sociological viewpoints on climate change, underscoring the need of cross-disciplinary work between the scientific and social sciences. The study provides a thorough framework for exploring the societal implications of climate change, but it also recognises its limits. The use of secondary sources and the absence of empirical data analysis are examples of methodological constraints, while dependence on Global Systems Theory and the paper’s narrow focus are examples of theoretical limitations. This article has certain limits, which may be addressed in future studies, and new routes for understanding the sociological viewpoints on climate change can be explored.

## 17. Direction for Future Work

The implications of this paper’s results and debates for future studies on climate change and social justice are substantial. We conclude with some suggestions for further study and avenues to pursue. Secondly, more study is required to fully understand how slow violence affects marginalised communities in the Global South. Our analysis shows that these people are taking a disproportionate hit from climate change, but further study is required to determine the speed with which violence emerges in various places, the variety of forms it takes, and the long-term effects it has. This may be accomplished via multi-disciplinary work that brings together experts in subjects including sociology, environmental studies, geography, and anthropology. Second, there needs to be greater study of how politics and power play a part in discussions and solutions to climate change. We find that the Global North plays a hegemonic role in these processes, but more nuanced study is needed to look at how power is negotiated, disputed, and resisted in various settings. Engaging with theories of power and politics critically, such as Global Systems Theory, postcolonial theory, and critical race theory, may help with this. Finally, further investigation into the power of social movements and action to bring about climate justice is required.

Our evaluation just touches on the importance of social movements, but more study is required to learn how they might inspire people to work together for long-term change. Researching the methods, tactics, and results of social movements across several settings might help. Fourth, greater investigation into the impact of education and communication on generating climate change solutions that are both long-term and fair is required. There is a need for additional study into the ways in which various types of education and communication might promote more sustainable and equitable communities, as is highlighted by our review. This may be accomplished via multi-disciplinary studies of how information and education

influence people's perspectives and actions on climate change. Last but not least, further study is required to determine how technology and innovation might be used to combat climate change. Our evaluation just touches on the issue briefly; additional study is required to learn how to use technology and innovation to advance more sustainable and equitable solutions. The potential of new technologies like renewable energy, carbon capture and storage, and blockchain for combating climate change may be explored in multidisciplinary studies.

Going ahead, we suggest that researchers from a variety of disciplines work together to address the linked and complicated nature of climate change and social justice. The environmental and social scientists, as well as climate change practitioners and politicians, may work together to accomplish this goal via open communication and cooperation. More attention should be paid to problems of power, politics, and social justice in future studies of the relationship between climate change and human rights, as we have done here. This may be accomplished via a critical dialogue with communities and social movements on the margins who are worst hit by climate change, as well as with theories of power, politics, and social justice. Lastly, we suggest that researchers in the field of climate change and social justice shift their attention to finding and advocating for more long-term, equitable solutions. Research that actively involves communities and other stakeholders in the process of developing and implementing solutions tailored to the unique challenges faced by those communities is one way to do this. The issues of climate change and social justice are discussed, and the importance of sociological viewpoints is emphasised. Our goal in writing this review was to encourage greater conversation and cooperation between scientists and social scien-

tists in order to find more long-term and fair answers to our most pressing problems.

## 18. Conclusion

Although the scientific scholarships have made important strides in our knowledge of climate change, this article argues that a full appreciation of the phenomenon necessitates a focus on the economic, political, and social variables at play. Those in the Global South who are most at risk from the effects of climate change will find the notion of slow violence especially helpful. This paper argues that a comprehensive response to climate change must go beyond technical solutions and also address the social and political structures that allow climate change to persist by highlighting the systemic inequalities and power differentials that underpin the extractive relationship between the Global North and Global South. In addition, the article stresses the need of taking each suggested response to climate change seriously. Proposals driven by the market that put a premium on profits for the North are not likely to help the world's poorest and most vulnerable people adapt to climate change. Instead, we need solutions that address the root causes of climate change and provide voice to the most marginalised communities. In conclusion, this study contends that addressing the difficulties associated with climate change calls for multidisciplinary cooperation and a close analysis of the reasons and possible remedies. This paper emphasises the importance of social, economic, and political factors in driving climate change by drawing attention to the concept of slow violence and the extractive relationship between the Global North and Global South. It also highlights the need for a comprehensive response that prioritises the needs and perspectives of vulnerable populations.

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