



# CLIMATE CHANGE: EXPLORING THE URGENCY AND THE NEED FOR CLIMATE FICTION

<sup>1</sup>Apoorva M Chikkamath, <sup>2</sup>Dr. P.S. Subrahmanya Bhat

<sup>1</sup>Research Scholar, <sup>2</sup>Associate Professor

<sup>1</sup>Department of English

<sup>1</sup>Karnatak University Dharwad, Dharwad, India

**Abstract:** Climate change is a global reality and needs immediate action. Climate change did not occur instantaneously but was a gradual process due to Anthropocene causes. It is crucial to view climate change from multiple perspectives in order to understand it deeper and mitigate it. While scientists of various fields are juggling to address climate change, a huge share of responsibility also lies on the shoulders of writers. The present article studies the emergence of climate change and how fiction writers can help in creating awareness about it.

**Index Terms – Climate Change, Anthropocene, Climate Fiction.**

Vandana Shiva, a distinguished environmentalist, and ecofeminist, offers a refreshing perspective on our relationship with the planet. Instead of feeling weighed down by the immense responsibility of saving the entire world, we should remember that the earth is also carrying us. This insight reminds us that we are interconnected with our environment, and it's vital to treat it with care and respect. Mother Earth has gifted man space and life to live without which he would not be existing. With time, man's greed has gulped down everything that belongs to Nature. From fresh air to fresh water, from north pole to south, there is nothing that is left untouched and untarnished by man. This has led to some irreversible earth defilement, resulting in climate change. Climate change is perceived differently by each section of the society. The scientific community considers it to be a scientific phenomenon that is occurring due to natural and Anthropocene causes. As per the Australian Academy of Science's website, Climate Change is characterized by a prolonged shift in weather patterns and consequential changes in oceans, land surfaces, and ice sheets. These modifications can occur over a span of decades or even longer. The weather here refers to the state of the atmosphere like temperature, wind, rainfall, and humidity, over a certain period. The Framework Convention on Climate Change defines Climate change as "a change of climate that is attributed directly or indirectly to human activity, that alters the composition of the global atmosphere, and that is in addition to natural climate variability over a comparable time period" (Roger A. Pielke, Jr, p.515). Human activity is playing a major role in aggravating the change in the atmosphere. The natural causes that lead to atmospheric changes are negligible and do not lead to major outcomes. The official website on Climate Change by the United Nations defines climate change as a slow and gradual modification in the temperature and weather patterns that occurs over a prolonged period of time. These alterations in atmospheric conditions are all recorded through the lens of the scientific faculty of the human mind. Hence, the understanding of climate change based on the definitions of the scientific community is not easily comprehensible by the common man. This brings the need to see climate change from various possible perspectives.

It is crucial to study climate change from a multi-dimensional view to mitigate it. In an article titled *Sociological Perspectives on Climate Change and Society: A Review*, the author promotes the interdisciplinary approach to climate change in order to understand it better and to mitigate it. Seeing climate change through a sociological perspective creates an understanding of risk perception, social vulnerability, and adaptive capacity of various groups in society which in turn help in understanding the dynamics of climate change. On the other hand, an economic perspective of climate change is extremely necessary to study the trajectory of the economy affected by climate change. In an article published in World Economic Forum, Andrea Januta is of the view that economists think it is paramount to tackle climate change in coming years to avoid the economic loss of around 1.7 trillion dollars a year by 2050. Economists not only analyze climate change impacts on the economy but also the cost involved in stabilizing and managing the climate. Hence, this perspective is also a need of an hour for the country's overall development and for sketching the mitigation techniques of climate change. Though various communities have put in several efforts to address climate change, there is a visible gap present in it. Hence, a fresh outlook is necessary to fill this gap and to see climate change with a brand-new perspective. This brand-new perspective to see climate change is possible only by fiction writers. Fiction writers have taken a step ahead to define climate change in a new way. Lydia Millet, a well-known American novelist has defined climate change as "a social and spiritual emergency as well as a political, scientific one" (Brady, qt. Lydia Millet) It is clear from her definition that climate change is no longer a scientific business because it is affecting every country, individual, and species that exist on Earth. Amitav Ghosh on the other hand has highlighted the consequences of global heating and argued that modern fiction writers must address the existential threats climate change poses to humanity.

### **The Evolution of Climate Change**

Climate change is not something that popped up one fine day but a gradual process that kept sending waves of caution, but which were ignored completely by man. It is a lengthy process that resulted from the activities made by man throughout the ages which started with a shift in the mindset of man. In the early ages, man lived in harmony with nature. He hunted for food, ate raw meat, and lived on trees. With the evolution of his brain and instinct to discover something new, he invented new tools and techniques for survival. He who survived on meat now began to cultivate lands which further led to settlements. Settlements caused mass clearing of forest lands and expansion of agricultural lands. The advancement of the industrial revolution changed the entire scenario and fastened the pace of climate change. The invention of the steam engine paved the way for large-scale usage of coal. The invention of vaccines curbed the spread of deadly diseases and led to an increase in population. Richard Black highlights the progression of climate change and acknowledges that as early as 1896, Swedish chemist Svante Arrhenius recognized that burning coal during the industrial age could intensify the natural greenhouse effect. In 1938, Guy Callendar, an engineer from Britain, proposed that warming is caused by an increase in CO<sub>2</sub>. The US President's Advisory Committee highlighted the greenhouse effect as a significant concern due to the rise in human population and fossil fuel emissions, as well as deforestation. The UN held its inaugural conference on the environment in Stockholm in 1972, leading to the establishment of UNEP. In 1990, the IPCC determined that human emissions had caused a temperature increase of 0.3-0.6 degrees Celsius over the past century. Human emissions form a layer around the earth and trap the sun's energy which further leads to global warming. According to Richard Black, in 2006, approximately eight billion tonnes of carbon were emitted through fossil fuel burning and industry, with developed countries being the major contributors. Presently, the Arctic Sea has reached a minimum extent of 3.41 million sq. km, the lowest since 1979. In 2013, the IPCC concluded that humans are the primary cause of global warming (Black).

### **Causes and Consequences of Climate Change:**

While natural causes like changes in the sun's activity and large volcanic eruptions can also lead to climate change, the main driving force of climate change has been man's activity. According to the United Nations' official website, the primary factor behind global climate change is the burning of fossil fuels such as coal, oil, and gas. On the other hand, the European Commission states on its website that deforestation is responsible for climate change as trees help to regulate the CO<sub>2</sub> levels in the atmosphere, and their elimination eliminates this benefit. Additionally, the commission mentions that an increase in livestock farming and the use of chemical fertilizers also contribute to climate change. Climate change has a vast and long-term impact on society. The National Oceanic and Atmospheric Administration's official website, as per the US government, highlights the interrelated impacts of climate change on various sectors of society. Drought can negatively affect food production and human health, while flooding can lead to disease spread and damage ecosystems and infrastructure. Human health issues can also limit worker productivity and reduce food availability. Climate change, therefore, affects every aspect of our world. The agency also notes how climate impact is uneven across the world and how socioeconomic inequities can make developing and underdeveloped nations who often have the highest exposure to hazards and fewer resources to respond, more vulnerable. In an article titled *Climate Change makes Wildfires and Smoke Worse* by AP published in The Economic Times, the author refers to the

statement made by a climate scientist named Michael Maan that climate change is a 'new abnormal.' He quotes Michael Maan "It continues to get worse. If we continue to warm the planet, we don't settle into some new state. It's an ever-moving baseline of worse and worse"(AP). This implies how one must act toward climate change and how one must not consider the climatic changes to be something normal. Regular occurrence of flash floods, drought, forest fires, cyclones, and landslides are the new abnormalities we are facing. Gone are the days when one worried about wars and military domination. Climate change has emerged as a new war against which every nation has to fight collectively.

### **Climate change and the vulnerability of the poor.**

There have been several documents and experiments to prove the existence of Climate Change. All these pieces of evidence are based on scientific investigation. We often come across columns in newspapers written by scientists and environmentalists about climate change. But what about the common man? How does he react to Climate change? UNDP in its recent survey conducted said that around 64% of people think that climate change was an emergency (UNDP and University of Oxford p-7). It is necessary to note that these surveys were mostly conducted in urban areas where the majority of them are educated. Education is extremely important to understand contemporary reality and act towards it. Uneducated people do not understand climate change and merely consider disasters as acts of God. UNDP reports say that the most profound socio-demographic driver of belief in the climate emergency and climate action is a person's educational background. "There were consistently very high levels of demand for climate action among people with post-secondary education in all countries, ranging from LDCs, such as Bhutan and the Democratic Republic of the Congo (both 82%), to wealthy countries like France (87%) and Japan (82%)" (UNDP and University of Oxford. Pg.9). LDC here means least developed countries which also have less developed education system. People in the least developed countries who believe in climate change are lesser in number compared to that in developed countries. UNDP data shows that only 58% of people from least developed countries considered climate change as an emergency (p.15). This is even evident in India's scenario. Due to socio-economic disparity, there is a wide gap between the rich and the poor. The poor are the ones who remain uneducated and suffer the most during climate change disasters. A recent survey conducted by Yale University noted that only 7% of Indians knew about global warming and 41% of Indians had not heard of it (Yale Programme on Climate Change Communication, p.1). As per the findings of a study by the Organisation for Economic Co-operation and Development (OECD), the impact of climate change is disproportionately felt by developing countries. This is primarily because of their distinctive geographical and climatic conditions, heavy reliance on natural resources, and limited capacity to adapt to changing circumstances. The most vulnerable among these nations are the impoverished communities, who are at the highest risk due to their limited resources and inadequate preparedness to cope with the impacts of climate change.

According to Barack Obama, as cited in Dantas, Climate Change is no longer a future issue, but a present reality that is affecting us here and now. Climate change is a growing concern that has been spreading to various sectors of society. There have been various initiatives taken up by organizations across the globe to educate people about climate change and mitigate it. One such initiative is IPCC. The IPCC, or Intergovernmental Panel on Climate Change, is a scientific organization focused on climate change. It was established by the World Meteorological Organization in collaboration with the United Nations Environmental Program. The IPCC offers scientific reports that assess the impact of climate change, potential future risks, and options for both adapting to and mitigating its effects (Dantas, 2018). The next organization on the list is the United Nations Environment Programme (UNEP), which is considered the foremost authority in the field of international environmental initiatives. The primary focus of UNEP's work is on the environmental aspects of sustainable development, and it operates in seven distinct thematic areas: climate change, disasters and conflicts, ecosystem management, environmental governance, chemicals and waste, resource efficiency, and the environment under review (Dantas, 2018). The Grantham Research Institute on Climate Change and the Environment explains that the UNFCCC is a treaty that was signed to address climate change. Established in 1992, it serves as the foundation for international climate negotiations and has led to important agreements such as the Kyoto Protocol (1997) and the Paris Agreement (2015). 197 states have ratified the Convention, committing to take action on climate change and report on their progress regularly. In addition to these organizations, there are various non-governmental organizations (NGOs) that are actively working towards mitigating climate change. Some examples include Greenpeace, Earth Island Institute, Earth Justice, and World Wildlife Fund, among others.

### **Importance of Climate Fiction in addressing climate change:**

Amidst all these initiatives taken by various organizations and activists, it is requisite to put forward the role played by fiction writers in addressing climate change. Literature acts like a mirror to society. It emphasizes the burning issues and projects them to the reader with a touch of imagination. It is this imagination that plays a very crucial role in impacting the minds of readers. "Literature adds to reality, it does not simply describe it. It enriches the necessary competencies that daily life requires and provides; and in this respect, it irrigates the

deserts that our lives have already become.” (C.S.Lewis as cited in Penlighten). The United Nations states on its official website that "everyone can make a difference by speaking up, sharing solutions, and advocating for change" (Communicating on Climate Change, United Nations). The United Nations stresses the importance of educating individuals and encouraging them to raise awareness about climate change. Using literature as a medium to raise one's voice and advocate for change is a powerful tool. The creative and imaginative power of literature can educate and inspire people. Climate fiction writers play a crucial role in shaping people's minds through their literature. Climate Change can be defined as a form of speculative fiction that features a changed or changing climate as a major plot device (Brown, F). It is a fiction that creates awareness about the environment and climate and is an emerging genre in the field of English Literature. Changing weather patterns and the rise in climate change have made this genre relevant and highly important. Ryan Mizzen in his article on Climate Fiction says “Despite the clarity of the picture that has emerged from climate scientists, we’ve failed to address the crisis with the urgency it deserves. But I’d like to explore a tool at our disposal that can help cut through the noise and disinformation. In doing so, it could help engage a wider audience about the climate crisis. It’s something that’s shaped the attitudes, actions and advances of society for thousands of years; the universal language of storytelling.”

Although climate fiction is a new genre and has gained popularity recently, there have been works written in the past that fall under the umbrella term Climate fiction. In 1889, Jules Verne wrote a novel called "The Purchase of the North Pole," which explores the idea of climate change caused by the Earth's axis tilting. Despite his fascination with science and engineering, Verne also incorporates a healthy dose of irony regarding their potential for harm and the flaws of human pursuits. Several well-known dystopian works by British author J.G.Ballard like *The Drowned World*, *The Burning World*, *The Wind from Nowhere*, and *The Crystal World* deal with climate-related natural disasters. The novel *Drowned World* portrays a world devastated by global warming. Due to increased solar radiation, a significant portion of the Earth's surface has become uninhabitable. In contrast, *The Burning World* depicts a world suffering from a scarcity of water. Following a severe drought, rivers have become mere trickles and the earth has turned to dust. Consequently, people all over the world are migrating toward the oceans in search of water. According to an article by Michael Berry in Salon, the novel *Dune* serves as an early example of a work that delved into ecology and environmentalism. It portrays familiar landscapes suffering from droughts, rising seas, and other environmental disasters, and introduces these ideas to a young and influential audience. In 1993, Octavia E. Butler created a vision of a possible future for the United States in her book "Parable of the Sower." The story portrays a world where climate change, wealth inequality, and corporate greed lead to apocalyptic chaos. Similarly, Margaret Atwood's trilogy delves into the dystopian theme of climate change. Contemporary writers like Kim Stanley Robinson, Paulo Bacigalupi, Ursula Le Guin, Barbara Kingsolver, and some others have dealt with the theme of climate change in their novels. Kim Stanley Robinson's 2017 novel, *New York 2140*, is a work of climate fiction that portrays a flooded and transformed New York City due to rising water levels. Paulo Bacigalupi's novel, *The Windup Girl*, takes place in Thailand's future and delves into various pressing topics like biotechnology and global warming. *Flight Behaviour* by Barbara Kingsolver revolves around the causes and consequences of climate change, making it the central theme of the novel. With the rising extreme change in climate patterns and the catastrophic events unfolding, the urge to shift towards environmental writing has increased and Climate Fiction is gaining popularity.

In today's scenario, Climate Fiction plays a very crucial role in mitigating climate change. Kyle Plantz in his article quotes Bloom “Cli-fi mirrors our fears of the future and at the same time our hope for solutions to the predicament we are in.” (Bloom, qtd. in Kyle Plantz). According to Rodge Glass in his article for The Guardian, entitled "Global Warming: The Rise of Cli-Fic," incorporating climate change into works of fiction can stimulate discussions about the topic. By constructing intricate narratives, readers are able to expand their comprehension and envision possible futures, prompting them to consider what kind of world they aspire to inhabit. According to a 2018 report by Matthew Schneider-Mayerson in the Environmental Humanities journal, people who engage in reading cli-fi literature are more anxious about the climate crisis than individuals who don't. This study highlights the potential impact that literature can have on people's perceptions of environmental issues. However, there is a trend going on to picturise climate change in a destructive way. There are very few novels that show a positive world of sustainable living. Climate fiction should not necessarily talk only about the catastrophic events that might occur if climate change persists. It can also present a positive world of carbon-balanced and sustainable living through its imagination and draw men towards following it for a better future. On the list is *Antarctica*, a novel by Kim Stanley Robinson that emphasizes the importance of sustainable living and the challenges of surviving in a hostile environment. According to Dominic Hofstetter's article, literature can become a catalyst for climate action if the climate-fiction genre expands beyond post-apocalyptic narratives and includes livable and fulfilling future worlds. He suggests that embracing such possibilities can bring positive change.

**Conclusion:**

Climate change is an urgent reality that has impacted every corner of the world. It goes beyond just environmental disasters and ecosystems and influences every aspect of society, including social, economic, and cultural life. Addressing climate change immediately and implementing policies wisely is crucial to tackling this issue. The responsibility of addressing climate change is not only on the shoulders of policymakers but also on fiction writers. Their ability to shape people's perspectives on the issue is immense. Climate fiction, in particular, has a vital role to play in this regard. It can serve as a warning of the potentially catastrophic events that await us and educate readers on sustainable living practices. By doing so, it can contribute significantly towards creating a more sustainable future for our planet. In his article, Dominic Hofstetter has made a valid point when he stated that by broadening the cli-fi genre beyond post-apocalyptic stories and embracing the potential of livable and fulfilling future worlds, literature can become a driving force for climate action. It's crucial for us to focus not only on the end of the world but also on how to tackle it. To do so, we require a narrative of optimism and belief, and climate fiction is the only answer.

**Works Cited:**

1. "Vandana Shiva Quotes and Sayings." inspiringquotes.us, [www.inspiringquotes.us/author/6862-vandana-shiva](http://www.inspiringquotes.us/author/6862-vandana-shiva). Accessed 12 July 2023.
2. "The Science of Climate Change." Australian Academy of Science, [www.science.org.au/learning/general-audience/science-climate-change/1-what-is-climate-change](http://www.science.org.au/learning/general-audience/science-climate-change/1-what-is-climate-change). Accessed 12 July 2023.
3. Pielke, Roger A. "What Is Climate Change?" *Energy & Environment*, vol. 15, no. 3, 2004, pp. 515–20. JSTOR, <http://www.jstor.org/stable/43735505>. Accessed 12 July 2023.
4. United Nations. "What Is Climate Change." United Nations/ Climate Action, [www.un.org/en/climatechange/what-is-climate-change](http://www.un.org/en/climatechange/what-is-climate-change). Accessed 12 July 2023.
5. ---. "Causes and Effects of Climate Change." United Nations/ Climate Action, [www.un.org/en/climatechange/science/causes-effects-climate-change](http://www.un.org/en/climatechange/science/causes-effects-climate-change). Accessed 13 July 2023.
6. Brady, Amy. "17 Writers on the Role of Fiction in Addressing Climate Change." *Literary Hub*, 15 Apr. 2019, <http://lithub.com/17-writers-on-the-role-of-fiction-in-addressing-climate-change>. Accessed 12 July 2023.
7. Black, Richard. "A Brief History of Climate Change." *BBC News*, 20 Sept. 2013, [www.bbc.com/news/science-environment-15874560](http://www.bbc.com/news/science-environment-15874560). Accessed 12 July 2023.
8. European Commission. "Causes of Climate Change." *Climate Action*, [climate.ec.europa.eu/climate-change/causes-climate-change\\_en](http://climate.ec.europa.eu/climate-change/causes-climate-change_en). Accessed 13 July 2023.
9. AP. "Climate Change Makes Wildfires and Smokes Worse." *The Economic Times/Panache*, *The Economic Times*, 3 July 2023, [economictimes.indiatimes.com/magazines/panache/climate-change-makes-wildfires-and-smoke-worse-scientists-think-its-the-new-abnormal/articleshow/101460460.cms](http://economictimes.indiatimes.com/magazines/panache/climate-change-makes-wildfires-and-smoke-worse-scientists-think-its-the-new-abnormal/articleshow/101460460.cms). Accessed 13 July 2023.
10. UNDP and University of Oxford. *Peoples' Climate Vote*. UNDP, 2021, [www.undp.org/publications/peoples-climate-vote](http://www.undp.org/publications/peoples-climate-vote).
11. Yale Programme on Climate Change Communication. *Climate Change in the Indian Mind*. 26 Aug. 2012, [climatecommunication.yale.edu/publications/climate-change-in-the-indian-mind](http://climatecommunication.yale.edu/publications/climate-change-in-the-indian-mind).
12. African Development Bank, et al. "Poverty and Climate Change : Reducing the Vulnerability of the Poor Through Adaptation." *OCED.org*, *OCED.org*, [www.oecd.org/env/cc/2502872.pdf](http://www.oecd.org/env/cc/2502872.pdf). Accessed 15 July 2023.
13. Dantas, Thales. "Organizations Fighting Climate Change: A Quick Guide." *Medium*, 9 Oct. 2018, [thalesetd.medium.com/organizations-fighting-climate-change-a-quick-guide-2e700d96dc52](https://thalesetd.medium.com/organizations-fighting-climate-change-a-quick-guide-2e700d96dc52).
14. "What Is the UN Framework Convention on Climate Change (UNFCCC)?" *The Grantham Research Institute on Climate Change and the Environment*, 24 Oct. 2022, [www.lse.ac.uk/granthaminstitute/explainers/what-is-the-un-framework-convention-on-climate-change-unfccc](http://www.lse.ac.uk/granthaminstitute/explainers/what-is-the-un-framework-convention-on-climate-change-unfccc). Accessed 17 July 2023.
15. *Library Guides: Non Governmental Organizations (NGOs): Introduction*. *Berkely Library*, [guides.lib.berkeley.edu/NGOs](http://guides.lib.berkeley.edu/NGOs). Accessed 17 July 2023.
16. "What Is the Importance of Literature and Its Impact on Society?" *Penlighten*, 6 Mar. 2009, [penlighten.com/importance-of-literature](http://penlighten.com/importance-of-literature). Accessed 17 July 2023.
17. *Communicating on Climate Change*. United Nations, [www.un.org/en/climatechange/communicating-climate-change](http://www.un.org/en/climatechange/communicating-climate-change). Accessed 17 July 2023.
18. Brown, F. "What is Climate Fiction? Cli-Fi and How It Can Help Us Respond to the Climate Crisis." *Stories for Earth*. 2019. <https://storiesforearth.com/2019/12/04/what-is-climate-fiction/>.

19. Mizzen, Ryan. "Can a New Wave of Climate Fiction Inspire Climate Action?" Mongabay Environmental News, Mongabay, 17 Dec. 2021, news.mongabay.com/2021/12/can-a-new-wave-of-climate-fiction-inspire-climate-action-commentary. Accessed 17 July 2023.
20. Glass, Rodge. "Global Warning: The Rise of Cli-fi." The Guardian, Aug. 2021, www.theguardian.com/books/2013/may/31/global-warning-rise-cli-fi. Accessed 17 July 2023.
21. Plantz, Kyle. "As The Weather Shifts cli-fi Takes Root as a New Literary Genre." news.trust.org, Thomson Reuters Foundation, 10 Apr. 2015, news.trust.org/item/20150410094252-x7we9. Accessed 17 July 2023.
22. Matthew Schneider-Mayerson; The Influence of Climate Fiction: An Empirical Survey of Readers. Environmental Humanities 1 November 2018; 10 (2): 473–500.  
doi: <https://doi.org/10.1215/22011919-7156848>
23. Climate Fiction. en.wikipedia.org/wiki/Climate\_fiction. Accessed 17 July 2023.
24. Berry, Michael. "Dune Climate Fiction Pioneer: The Ecological Lessons of Frank Herbert's Sci-fi Masterpiece Were Ahead of Its Time." Salon, 13 Aug. 2015, [www.salon.com/2015/08/13/dune\\_climate\\_fiction\\_pioneer\\_the\\_ecological\\_lessons\\_of\\_frank\\_herberts\\_sci\\_fi\\_masterpiece\\_were\\_ahead\\_of\\_its\\_time](http://www.salon.com/2015/08/13/dune_climate_fiction_pioneer_the_ecological_lessons_of_frank_herberts_sci_fi_masterpiece_were_ahead_of_its_time). Accessed 17 July 2023.
25. Hofstetter, Dominic. "Writing for Impact: How Climate Fiction Can Make a Difference." Medium, 7 Dec. 2021, dhofstetter.medium.com/writing-for-impact-how-climate-fiction-can-make-a-difference. Accessed 17 July 2023.
26. "Climate Change Impacts." National Oceanic and Atmospheric Administration, [www.noaa.gov/education/resource-collections/climate/climate-change-impacts](http://www.noaa.gov/education/resource-collections/climate/climate-change-impacts).
27. Islam, Md Saidul, and Edson Kieu. "Sociological Perspectives on Climate Change and Society: A Review." Climate, vol. 9, no. 1, Jan. 2021, p. 7. <https://doi.org/10.3390/cli9010007>.
28. Januta, Andrea. "Economists Support 'immediate and Drastic Action' Against Climate Change." World Economic Forum, May 2022, www.weforum.org/agenda/2021/04/economists-global-action-climate-change-natural-disasters. Accessed 8 Aug. 2023.

