

**Auguries of Apocalypse: Treatment of Climate Change in  
the Novels of Margaret Atwood, Barbara Kingsolver and  
Lorin R Robinson**

Thesis

Submitted to the University of Calicut in Partial Fulfillment of Requirements  
for the Degree of Doctor of Philosophy in English Language and Literature

By

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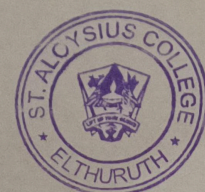
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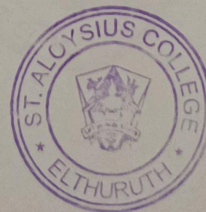
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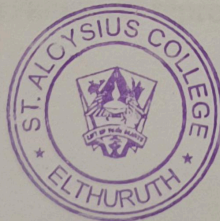


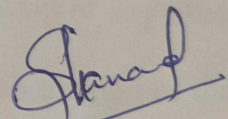
## DECLARATION

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## Abstract

Discourses on the abuse of the environment and the resultant climate change phenomenon have been circulating in the erudite sections of society for quite some time now. The unpredictable moods of nature, presented in the form of climate change, have become a severe threat to the normal functioning of society. Anthropocentrism has often been quoted as the reason for the current trend of climate change that is evolving across the globe. On the other hand, a considerable section of knowledgeable people in the world are seen to perceive climate change as part of the normal evolutionary pattern of the earth. Anthropocentric or not, the result, undoubtedly, has been catastrophic. The increasing number of natural disasters – droughts, floods and famines has finally begun to succeed in breaking the illusion of man's supremacy over all things around him.

Climate change has become one of the major global issues now and it can also be found insinuating into almost all other current global concerns influencing, affecting and at times, defining them. The world is now facing what the Indian author and theorist Amitav Ghosh, in his work *The Great Derangement*, calls 'climate despair' which might inevitably lead to some kind of an eco – apocalypse. Thinkers, theoreticians and philosophers including the likes of Ghosh, Ursula Heise, Timothy Mitchell, Timothy Morton, Adeline Johns Putra, Adam Trexler and Mathew Fox have attributed this critical situation of runaway climate mainly to man's greed to possess and consume.

Literature, as a serious and traditional mode of expression, plays a seminal role in diffusing information about this complex issue into the society, especially among the nonscientific community. Climate change, typically considered a purely scientific concern, should be



recognized as a complex phenomenon entailing political, social and cultural dimensions. Representing climate change in literature signifies the representation of these complex socio-cultural aspects of the issue in a manner comprehensible to the common man.

However, the aspiring author of climate fiction is bound to face a number of representational challenges. The complex socio-cultural fabric upon which climate change is situated makes it intangible and undefinable which leads to hurdles in representation. These representational hurdles, in extension, can also be understood as the core reasons behind the difficulty in landing upon specific solutions or action plans to counter the climate change issue. This thesis attempts to analyze the narrative aspects, socio-cultural dimensions and solutions envisaged in the select works of fiction. The works selected for study are the *Maddaddam Trilogy* by Margaret Atwood, the novels *Prodigal Summer*, *Flight Behavior* and *Unsheltered* by Barbara Kingsolver and *The Warming: Speculative Fiction about the Human Impact of the Climate Crisis* by Lorin R Robinson.

The first core chapter of the thesis focuses upon the aspect of representation and narrativity of climate change in literature. The chapter deals with the major representational hurdles faced by the author of climate change literature and the narrative methods undertaken by the authors of the primary texts in order to scale them. The study made in the chapter brings the conclusion that the representational challenges of climate change arise from the massive spatial and temporal scale and the complex socio-cultural fabric of the phenomenon. The study also finds that the difficulty in representing climate change in fiction is the reflection of the general intangibility of the subject and the resultant inability to find solutions or to arrive at plausible actions.

The second core chapter probes into the depiction of the socio-cultural dimensions of climate change in the primary texts. The chapter analyzes the social, political, religious, materialistic, humanistic and psychological facets of the climate change discourse and describes how these aspects overlap, influence and impact each other making the discussion complex and inconclusive. Apart from this, the chapter also examines how the primary texts have dealt with the themes of species extinction, deforestation and interspecies respect and co-operation in relation to climate change. The study comes to the conclusion that the notion of anthropocentrism, materialism, extractivist mindset and excessive belief in the human capacity to tackle all problems lead to issues like climate change, climate change denial and its consequences.

The third core chapter studies the solutions or action plan put forth in the primary texts to counter the climate change situation. The chapter delineates how all the texts concur upon the vision that climate change is remediable through a deliberate transformation of ideological stances and in extension, transformation of lifestyle and priorities. The study of the texts unveil that all the primary texts, through different pathways, attempt to state that the ultimate solution to climate change starts when anthropocentrism paves way to biocentrism and human beings prioritize the environment and all the species on it above materialistic aspirations. Regeneration through hope, knowledge, spirituality and storytelling as portrayed in the texts are analyzed in detail in the chapter. The visions of interspecies cooperation and respect for all species is discussed in correspondence with the idea of 'World as our common home' by Pope Francis as stated in the Encyclical *Laudato Si*.

Thus, the thesis proposes to state that climate change as a subject ought to be approached in segments both in narration and in action. The narrative scheme and the thematic approach of the primary texts enforce this perception. The essence of the critical analysis of the primary texts

puts forth the message that climate change, anthropogenic or not, is to be confronted to ensure the survival of the human and non human species. An effective ideological transformation towards responsible consumerism, interspecies respect, readiness to adopt alternative, renewable resources, reduction of energy consumption and resource wastage and the acknowledgement of responsibility to support people and countries unfairly suffering from climate consequences require large scale transformations in the socio political and cultural fabric of the world as a whole. To attain this, contribution from all quarters – science, literature, arts, governments, administrations, diplomatic arenas, corporate sections, health care and primarily, the individual human being, is essential. Adding the elements of hope, optimism and a sense of oneness with the planet and fellow beings will catalyze the movement. The incremental and hopeful transformations made in everyday life can help create a renewed mindset in the current young generation conditioning their priorities and ambitions towards an environmentally conscious world. Thus, small steps from many directions focused towards the same goal can create a new, livable world for the future.



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## Chapter 1

### Introduction

Climate has been understood as the long-term pattern of weather in a particular area. The official education blog of National Geographic states that a region's weather pattern tracked for thirty years forms the climate of the region. This knowledge of the common patterns of the weather in a region has influenced the formation of all the foundational factors of human life as a community. Agricultural practices, food choices, rituals and festivals depended upon the stability of the climate. However, the contemporary world is distinguished by the emergence of the climate change phenomenon which has upended this predictive pattern of climate. The unprecedented disruption in the climate pattern has begun to create alarming consequences and has become a threat to the existence of all species, both human and non-human.

Discourses on climate change, both anthropogenic and natural, have attained the visibility to rule over all academic, political and diplomatic discussion platforms as the consequences of the phenomenon have infiltrated into all aspects of life on earth. Literature, as a traditional mode of dissemination of information, has begun to absorb climate change into its territory and dwells upon the varied aspects and manifestations of climate change.

This thesis intends to investigate the treatment of climate change in fiction. The selected works of Margaret Atwood, Barbara Kingsolver and Lorin R. Robinson have been taken up for study. Though most of Atwood's works exhibit concern for the environment, her seminal work, *The MaddAddam Trilogy*, consisting of *Oryx & Crake* (2003), *The Year of the Flood* (2009), and *Maddaddam* (2013), features a dense portrayal



of anthropogenic environmental catastrophe. Among Barbara Kingsolver's novels, *Prodigal Summer* (2000), *Flight Behavior* (2012) and *Unsheltered* (2018) have been taken up for study. Lorin R. Robinson's sole work of fiction, *The Warming: Speculative Fiction about the Human Impact of the Climate Crisis* is also studied here. The thesis attempts to look into the various aspects of climate change as addressed in the primary texts.

In order to set the subject in its historical and social context, the forthcoming sections attempt a historical study of climate change. The historical placement of climate change has been done with reference to a number of books and articles. However, the main source of the information is the text *Anthropocene Fictions: The Novel in a Time of Climate Change* by Adam Trexler. Additional information has been garnered from several articles, You Tube videos and documentaries.

### **1.1 Historical Placement of Climate Change**

The Industrial Revolution has been the one epistemic turn in history that has brought about unprecedented and unparalleled transformation in the life on earth, which the repercussions of the event are still on. When machinery replaced manual labor, the process set into motion a plethora of then unnoticed changes on the geological balance of the planet. The use of coal as a fuel, which set off the Revolution, was in fact the beginning of the unbalanced human intervention in the natural balance of the planet.

When machines replaced manual labor, and when more products and facilities, especially medical facilities, entered the life and lifestyle of human beings, life became easier leading to an exponential increase in population all over the world. The increase in population, in turn, led to increase in demand and slowly but surely the



supply of natural resources, which at one point of time seemed inexhaustible, began to dwindle. However, by that time industrial and economic development had become the norm, thus making man turn a blind eye towards the depleting natural resources.

Excessive mining and manipulation of the earth's natural formation for resources has brought in the inevitable effects of global warming and greenhouse gases.

Industrialization, perhaps the greatest cause for human induced climate change, termed anthropogenic climate change, can be seen as two cycles. The first cycle which can roughly be placed between 1800 and 1870 is distinguished for coal mining, construction of railroads, excessive land clearing that accelerated the emission of greenhouse gases and a sudden surge in population due to increased sanitation and better agriculture. 1870-1910 witnessed another wave of industrialization with the introduction of fertilizers and other chemical substances which accelerated industrial growth and along with it, environmental degradation. All these factors have directly contributed to the climate change phenomenon.

However, concerns about climate change as an issue threatening the very existence of earth began much later. Yet, it has to be admitted that some scientists had actually speculated about how the emission of certain gases in the industrial areas can block infrared radiation and can also alter the natural concentration of gases in the atmosphere that might lead to a disruption of the natural balance of the atmosphere. In 1859, John Tyndall, a nineteenth century Irish physicist, proved the pre-existing surmise that the earth's atmosphere has a Greenhouse effect. Tyndall's experiments during the 1860's confirmed that coal gas, containing carbon dioxide, methane and hydrocarbons, was tremendously effective in absorbing energy. Ultimately, he succeeded in demonstrating that carbon dioxide could act like a huge swath of sponge

and absorb multiple wavelengths of sunlight, giving rise to an increasingly warmer and ultimately, hotter planet.

By the 1930's, when the speculations about the warming of the planet were still facing cynicism from the scientific world, British engineer Guy Stewart Callendar began talking about the likelihood that the warming might have actually started to take place. He tried to point at the fact that the United States and the North Atlantic region have undergone a significant rise in temperature as an aftermath of the Industrial Revolution. While Callendar's arguments were mostly met with skepticism, he vehemently continued to argue into the 1960's that global warming was underway. In spite of the disbelief and criticism meted upon by his arguments, Callendar succeeded in initiating the concept and possibility of global warming into popular discourses. Thus, it took nearly a century of research, data and persuasion to convince the elite scientific community that human manipulation of the earth's resources can actually alter the climatic patterns.

Even when scientists rolled out reports and warnings about the increasing greenhouse gas emissions, global warming and the possible collapse of tropical ice sheets that would raise the sea levels, such studies remained in the academic circles and failed to infiltrate the consciousness of the society. The speculations about the future were viewed by the then society with curiosity rather than concern. This lack of concern, however, has now catalyzed into what has now become the massive anxiety about climate change and the resultant horrors that has gripped the world. As global warming as a reality gained currency, the world as a whole began to look for ways to rectify the damage done. Government funded projects to monitor and record the changes in levels of carbon dioxide in the atmosphere and to keep tab on the fluctuations in the climate pattern emerged during the 1950's.



As the early 1980's suffered unprecedented heat, genuine concern took the place of anxious curiosity. Widespread droughts and wildfires within the United States of America triggered a flurry of media attention on the issue of human induced climate change, which in turn, aided the scientists to bring their evidence and forecasts into public attention. In the year 1989, the Intergovernmental Panel on Climate Change (IPCC) was established under the United Nations to investigate the scientific, political, social and economic aspects of the climate change issue.

Climate change has now become a matter of utmost concern and anxiety. The direct and indirect repercussions of the human induced climate change phenomenon have begun to show themselves through frequent hurricanes, floods, droughts and previously unheard-of diseases. Since an increasing number of natural disasters – droughts, floods and famines - have finally begun to succeed in breaking the illusion of man's supremacy over all things around him, the issue of climate change has taken a front seat in the scientific and academic discussions across the world.

## **1.2 Climate Change and the Socio-Political Scene: An Overview**

Climate change, in the contemporary world, is perhaps the most threatening and debilitating issue confronting human kind today. The unpredictable moods of nature have turned out to be a matter of acute concern. Anthropogenic or not, climate change has, during the past few decades, taken millions of human and animal lives and has destroyed vast geographical spaces.

The magnitude of climate change as a serious concern is seen to increase ominously day by day. Water, the lack or excess of it, has begun to take up the stature of a potential reason for international disputes. The increasing heat has led to ominous

forest fires, heat waves, droughts, melting ice caps, loss of habitat, species disappearance and several other perceived and unperceived alterations on the earth.

It seems that the world is facing what Amitav Ghosh, in *The Great Derangement*, calls ‘climate despair’(91) which might inevitably lead to some kind of an eco – apocalypse. Thinkers, theoreticians and philosophers including the likes of Ghosh, Timothy Mitchell and Mathew Fox have attributed this critical situation of runaway climate mainly to man’s greed to possess and consume for which he makes indiscriminate use of nature's resources. The most disturbing fact is that the public perception of the issue is still clouded and vulnerable and is made more complex by the political stances of climate change denial which is, in turn, backed up by corporate interests. Ghosh holds historians, politicians and writers responsible for the blissful oblivion in which human society survives.

Economic, political and social concerns dominate the ideological realms of the human race. The failure to see the whole world as one single system and to see oneself as part of it leads to disastrous consequences. Exceeding human interference into any aspect of nature can result in unbalancing the whole system. This realisation, however, remains in philosophical and theoretical treatises and is not adopted into real life.

Pope Francis in his second encyclical *Laudato Si*, which is subtitled “On Care for Our Common Home”, puts forth a sharp indictment of the irresponsible ways of the world towards the earth. The Pope’s words are in recognition of the fact that climate change has actually begun to shake the pillars of existence. The Pope talks about the close connection between the factors of climate change, environment racism and the resultant poverty. Amitav Ghosh compares the Pope's encyclical to the Paris



Agreement on Climate Change and says that the Pope's work is more humane, serious and just. However, both the encyclical and the Paris Agreement stamps upon the impact of climate change upon the global thought system.

Ghosh hints that literature has till date been unable to effectively depict the issue of global climate change. He states that if the seriousness of the subject matter is the criterion for being represented in literature, then climate change should be the major preoccupation of authors across the world. For Ghosh, climate change is not just a crisis of nature but also a crisis of culture, thus that of the imagination. When literary forms are unable to negotiate the wild waters of climate change, it signifies "an aspect of the broader imaginative and cultural failure that lies at the heart of the climate crisis" (10). Ghosh states that climate change presents "peculiar forms of resistance" (10) to serious fiction.

Working from an anthropocentric world, objective and frank narrations on climate change is a challenge not only to the arts and humanities but also to the general comprehension of the people and in the cultural scene as well. However, mitigating climate change and adapting to the already evolved consequences of climate change is a matter of prime socio-political responsibility. The mitigation and adaptation efforts are to be executed on a global level as the impacts of climate change are also of a global scale. The United Nations Framework Convention on Climate Change, known as the Paris Agreement on Climate Change, which was adopted by 196 Parties at the 21<sup>st</sup> Conference of Parties of the United Nations Framework Convention on Climate Change in December 2015 and which came into force in November 2016, can be considered a landmark movement to tackle climate change. It is the first legally binding international agreement on the issue demanding the nations to undertake ambitious projects to mitigate and adapt to climate change.

The Agreement garnered so much political attention that the discussions on it have led to increased awareness on climate change and its consequences. The need for a global response to climate change has become inevitable and as Al Gore, former Vice President of the United States, has said, “climate change is a planetary emergency- a crisis that threatens the survival of our civilization and the habitability of our earth” (“Joint Global Warming Hearing: Al Gore Opening Part 1”).

Al Gore is one of the strongest activists of climate change, and one of the first politicians to grasp the seriousness of the issue and to call for a reduction in emissions of carbon dioxide and other greenhouse gases. He has used his political stature and power to disseminate awareness and information about anthropogenic climate change. In *An Inconvenient Truth: The Planetary Emergency of Global Warming and What We Can Do About It*, he states:

Global warming, along with the cutting and burning of forests and other critical habitats, is causing the loss of living species at a level comparable to the extinction event that wiped out the dinosaurs 65 million years ago. That event was believed to have been caused by a great asteroid. This time it is not an asteroid colliding with the earth and wreaking havoc: it is us. (Al Gore 9)

People like Leonardo Di Caprio and Greta Thunberg also have made extensive campaigns against the anthropogenic nature of climate change and have called for adoption of measures of mitigation and adaptation.

The human contribution in accelerating the pace of climate change is colossal. The Paris Agreement identifies the anthropogenic factor of climate change and attempts to tackle it. The Agreement charters a set of conditions and recommendations obligating world nations to adopt strategies and make commitments



to mitigate, adapt and attempt to keep the climate crisis in check. The Agreement also creates a global action plan for transparent monitoring, reporting and boosting the individual and collective efforts of the nations as per their respective abilities.

However, it had been obvious that committing to a globally significant and crucial pact like the Paris Agreement requires a fundamental refurbishment of the policies and strategies of every party nation. Every political decision taken will have to be checked against the agreement, as almost all actions are bound to impact climate in one or other way. The matter of climate change and the debates surrounding it create a complicated scenario as it entails a plethora of social, political and economic consequences. The changes in climate and new knowledge about climate will have to contend with and restructure existing knowledge and imagination of environmental processes. This will lead to an inevitable challenge to the dominant framings and trajectories of societal development. Reframing the developmental strategies of nations will definitely entail challenging economic consequences, which in turn, will impact diplomatic relations among countries and also with the corporate sector which holds virtual control over the economy. This has proved a massive challenge to many nations, especially those that contribute to a major part of carbon emissions.

A number of world leaders have been seen to be in outright renunciation of the responsibility and have taken the side of climate change deniers. Global leaders are seen to publicly deny climate change and to refute the recommendations put forth in the Paris Agreement. Debates on the differential distribution of the consequences of climate change and also on the differential responsibility of the nations in tackling climate change is also rife.

The United States of America, the country which has released more greenhouse gases into the atmosphere than any other country, is also the only country to withdraw from the Paris Agreement. In 2015, when the Agreement came into action, Barack Obama, the then President of America envisioned “a world that is safer and more secure, more prosperous and more free” for the future generation (Somanader). The country then supported the agreement and committed to the aims of the agreement. However, with the change of administration in 2017, the new president Donald Trump disavowed all commitments towards the agreement and took a stance of climate change denial. Later, he also made statements downplaying the seriousness accorded to climate change by scientists and activists. In a 2016 interview for the New York Times, Trump stated that: “I think there is some connectivity [between human activity and climate change]. There is some, something. It depends on how much. It also depends on how much it's going to cost our companies” (Trump). It can be understood that the Trump Government prioritised the economic aspect rather than the moral, environmental and social aspect of the issue. Later on, in 2020, the change of administration saw Joe Biden reasserting the Government’s commitment to combat climate change.

This wavering of opinions of the administration plays a great role in misleading the common conception of climate change. The changing nature of the perspective on the issue, especially when such ideological discrepancies are seen among the higher rungs of administrative strata, creates complexities in the comprehension of the issue among the society. The complex ideological baggage attached and the partisan nature of the issue compounds the conceptual difficulties of climate change. For most people climate change is an abstract, impersonal and

ideologically charged issue which makes it an unpopular and uninteresting subject for discussion.

Article 7 of the Paris Agreement contains a statement that the parties should reinforce cooperation on “strengthening scientific knowledge on climate, including research, systematic observation of the climate system and early warning systems, in a manner that informs climate services and supports decision making” ( Section C). However, the diffusion of knowledge on the matter itself is seen to be highly politicized and wide divides can be perceived in outlooks and standpoints regarding climate change.

The increasing occurrences of unprecedented climate events all over the world has now begun to raise greater concerns and have even resulted in vehement climate change deniers to soften their arguments. The reality of climate change has begun to dawn upon the society and literature might have a great role in conveying awareness, influencing perspectives and in inciting actions among the non-scientific community.

Literature, being a medium with the unique potential of being able to absorb the socio-cultural alterations across the globe, inevitably finds the presence of climate change discourses being embedded into the narratives increasingly. The forthcoming section discusses the manifestations of climate change in literature.

### **1.3 Climate Change in Literature**

Climate change, being a matter of great concern demanding greater attention and a massive social change, more research on the issue in all fields of study is vital. The unpredictability of climate affects all the aspects of life on earth and is bound to bring about massive alterations to all modes of human existence. The life of the future generation banks upon the manner in which climate change is dealt with now.



Literature, being a medium, which has access to readers from all sectors of the society, has the responsibility to represent and spread knowledge on an issue that can affect the world and can influence the fate of the future. In spite of Ghosh's assertion on the contrary, a considerable volume of literature on climate change has been produced since the 2000s.

The extent to which creative interventions like literature and art can influence and shape the opinions, attitude and responses of the society towards issues of controversy like human induced climate change is paramount. Ed Finn, director of the Centre for Science and the Imagination, Arizona State University, in the introduction to an interview with author Margaret Atwood states, "The planet is changing. We need creativity, ambition, and some powerful new stories to understand how we can change with it."

Literature can depict the precariousness of human existence -- the dawning recognition of the presence of non-human elements like the rising seas and storms. Moreover, literature, especially cli-fi, deconstructs the human centric notions of man and can bring the uncanny, non-human aspect of existence to the fore. Such works disrupt the halo of security and pride around the human race, opening its eyes to the reality confronting it.

Literature as a mode of expression and communication has always held a prime place in the diffusion of complicated ideas among the society. The issue of the topsy-turvy climate has penetrated the academic circles and found representation in literature gradually, yet firmly. Glen Love, while delivering the presidential address, *Revaluing Nature: Toward an Ecological Criticism*, at a 1989 Western Literature Association Conference entitled "Toward an Ecological Literary Criticism", urged

that time has come for literary scholars to respond more actively to the environmental crisis. He speculates that literary studies remain indifferent to the environmental crisis mainly because of “our discipline’s limited humanistic vision.” – which has led to a “narrowly anthropocentric view of what is consequential in life” ( Love 215). He states that the depiction of the issue of anthropogenic climate change in literature is a matter of utmost difficulty and urgency. The difficulty arises out of the obvious complications that surround the subject – the intricacy of yoking the two seemingly parallel and entirely diverse disciplines of science and the humanities, the uphill task of getting the reality of climate change and its grave repercussions filter into the psyche of people who fundamentally prefer to ward off the subject as a farfetched possibility and the risk of getting involved in a perilous war with the global capitalists and power pillars who vehemently deny climate change and keep a muscle fortress against all attempts to reduce the excessive exploitation of nature.

Climate change has affected and altered the normal functioning of the world, by nearly every metric conceivable, during the last two centuries. As Margaret Atwood said in the interview by Ed Finn at the launch of the Imagination and Climate Futures Initiative, “Climate change is everything change.” It touches upon all aspects of life on earth and its repercussions span from melting of polar ice caps to upsetting everyday life. Representing climate change primarily demands an initial choice of what to include in the representation and what not to. Touching upon a subject of such vast significations entails a lot of selection and editions. The representation of future worlds marked by climate catastrophes and that of everyday lives touched by climate concerns require a dramatic imaginative narration as the issue is mainly intangible and invisible.

The relatively new genre of climate fiction or cli-fi brings in the aspect of climate change. The authors like Margaret Atwood, Lorin R. Robinson, Paolo Bacigalupi, Michael Crichton, Barbara Kingsolver, Ian McEvan, Kim Stanley Robinson, Jeanette Winterson and several others have written about climate change, especially the human induced aspect of it. Great numbers of new authors are also seen to venture on the theme experimenting on narrative forms, thematic representations and space and time construction.

Climate fiction, perhaps being in the formative stage, has not yet completely devised the ways of narration and presentation. Fiction on climate change occurs in various forms. If not for the generic category of climate fiction, they would have been variously categorised under science fiction, fantasy, scientific thrillers, survival narratives, scientific horrors, apocalyptic and end of the world narratives, dystopian fiction, speculative fiction and the like, either singularly or in different combinations. Juha Raipola, in “What is Speculative Climate Fiction?” states that, “Due to the large generic variety of fictional climate narratives, it might even be argued that despite forming a distinct thematic category of fiction, cli-fi seems to lack the formal characteristics of a genre proper” (1). Each fictional work dealing with climate change is manifested in different ways in different genres and modes and is wrapped together by the theme of climate change. So, in analysing climate change literature, it would be worthwhile to investigate a genre or narrative mode or modes that would represent the issue in a logical and scientific manner without resorting to impossible flights of fancies and thereby giving the reader a sense of reality. The complex and all-encompassing nature of the climate discourse demands a study into the socio-cultural dimension of climate change and its depiction in fiction. The solutions envisioned by fiction for the issue of climate change are also a relevant field of investigation.



The researcher undertook to investigate the treatment of climate change in literature due to the inherent passion in literature on ecology and ecological concerns. The curiosity to investigate on how the medium of literature would harness a topic of such colossal and global significance and consequences has also amplified the desire to work on climate change. While deciding on the topic of research, the aspects of contemporariness, social relevance and ecological significance were prioritised and this ultimately led to the chosen topic.

#### **1.4 Research Problem**

The research project intends to investigate the ways in which the phenomenon of climate change is represented in the primary texts. Climate change, being a deeply complex and abstract circumstance confronting the world now, is primarily characterised by its non representability. Therefore, the first part of the study focuses on the aspect of narrativity and probes the narrative strategies adopted in the primary texts to manoeuvre the representational hurdles of climate change. The second part attempts to study how climate change is embedded in the socio-cultural fabric of the society that includes the politics, denial, economical stands, diplomatic relations and psychological repercussions, and how it impacts and is impacted by these socio-cultural dimensions. This part reflects upon the contribution of the socio-cultural background upon the near non representability of climate change. The insights gained from the study of the socio-cultural context inform the development of the third section which identifies the inevitability of a conceptual level transformation in human kind that characterises the awareness of the need to replace anthropocentrism by biocentrism. The research expects to conclude with the acknowledgement that the difficulties in representation of climate change and that in putting forth effective climate action emerge ultimately from the complex socio-cultural and political

placement of the discourse and is continuously influenced by the deep set materialistic and extractivist ideologies of the human species. The possible solution to the problem lies in ideological transformation towards responsible consumerism and conscious pro environmental attitude. Thus, in essence, the problem of research would be - identifying the cause of representational difficulties in the socio-cultural background and the ways in which they are overcome, which leads to the awareness of the need for ideological transformations as reflected through such representations.

### **1.5 Hypothesis**

Climate crisis is real. In spite of all the mechanisms of denial and indifference, the patterns of climate are changing in an unprecedented manner and are affecting life on earth. It is the definite outcome of the material and extractivist human culture. The nature of this anthropocentric cultural background is so complex and vast that it defies representations and communications. The unrepresentability of climate change in fiction and the slow pace of climate action is directly related to its embeddedness in the socio political and cultural imbroglio.

Solutions to this problem which seems to be unscalable are, however, possible. Rethinking on how we would return to a state of mind where earth is considered a common home for all species and is seen as a source of life rather than as a site for extraction, can contribute to the path for a solution to the climate change crisis. This ideological transformation will lead towards a definite solution, though beyond the time and space expanse of individual human life. The result of the transformation might take generations to manifest, but is an optimistic future to envision.

Thus, the research project grounds itself upon the proposition that the rectification of the aftermath of climate change depends upon conceptual and cultural transformation towards a life beyond anthropocentrism and the anthropocene.

### **1.6 Literature Review**

Climate change has become one of the major global issues now and it can also be found insinuating into almost all other current global concerns influencing, affecting and at times, defining them. Climate has turned out to be a dynamic social and cultural force potent enough to reshape societies, economies and environments. Thus, climate change, anthropogenic and otherwise, is as much a political, social and cultural event as it is scientific.

Writers, critics, environmental activists, social leaders, public figures, celebrities and several people from all walks of life have placed their diverse views on climate change on various platforms. The concept of representing climate change in literature is also a much-discussed topic and critics like Adam Trexler, Adeline Johns Putra, Timothy Morton, Amitav Ghosh and Julia Leyda have addressed it in their books and articles.

The literary realm has witnessed a phenomenal increase in the number of works produced on climate change during the decade of 2010-2020. Prior to this, researchers could identify a curious dearth in the literary output on climate change. In 2005, environmental writer Robert Macfarlane in his article “The burning question” published in *The Guardian*, asked, “Where is the literature on climate change” (1)? However, one decade later, a legion of works has been published which deal with climate change and its consequences. Most of the critical works on climate change



dealt with the difficulty of representing a matter of such massive proportions within a fictional landscape.

However, a cursory scan of the western literary history proves that climate change has appeared in literature long before, in the form of concerns on the over exploitation of natural resources and the increasing human centric nature of the world. The concerns about the changing pattern of climate and the anthropogenic nature of the change are not a recent phenomenon. A superficial surveillance can reveal that the concern and its reflection in literature can be as old as the story of Noah in Genesis 6-8. Narratives of apocalypse and floods can be seen scattered in the traditional texts of almost all cultures. However, the older stories mainly deal with flood and ice rather than warming and are not based on climate science and scientific observation. Contemporary literature on climate change, however, displays the tendency to base themselves on current global climate situations and intellectual scientific observations and predictions. This inevitably leads to unavoidable instances of anthropogenic warming and the resultant change in climate patterns.

The scientists of the world have been researching the greenhouse effect from about the 1800's. The Swedish chemist Svante Arrhenius declared in 1896 that man-made technology was contributing largely to the warming of the planet. Later, in 1975, the oceanographer Wallace Smith Broecker coined the term "global warming." Writers have been instrumental in producing literature on the matter corresponding to the concerns on the issue raised during their lifetime. However, the term climate fiction itself came into existence only in the 2000's when it was coined and aptly abbreviated to "cli - fi", following the model of "sci - fi", by Dan Bloom, journalist and freelance writer based in Tokyo.

Dan Bloom, in an interview with David Thorpe, chief consultant of Sustainable Cities Collective and author, defines cli fi as a new genre term that stands for works of art and storytelling that deal with climate change and global warming concerns. He says that he likes to think of cli fi as a “critical prism: a way to focus on what the future might hold” (Thorpe).

Benjamin Kunkel, author of a climate change drama *Buzz*, speaks about the difficulty in writing about climate change- something that is always present but difficult to grasp, in an article “Inventing Climate – Change Literature”, published in the New Yorker in October 2014. He says,

A sense of what we are doing to the planet accompanies me all the time, but mostly as abstraction, a morbid static in the air...If climate change has, to date, proved hard to write about, that is because it exists for most of us, to date, as something that afflicts different neighbourhoods, distant cities or future times...we are aware of climate change and also, we are not.

Rob Nixon in his book *Slow Violence and the Environmentalism of the Poor*, calls the long term but subtle impact of environmental devastation a “slow violence”(Nixon 2) that is overlooked by the media and politics. It is overlooked as it is not concrete and does not have “instant sensational visibility” (2). He believes that there is an urgent need to engage with a violence that is “neither spectacular nor instantaneous, but rather incremental and accretive...” (2). He also speaks about the representational, narrative and strategic challenges posed by the relative invisibility of this slow violence.

Nathaniel Rich, author of several works on climate change, says in a question answer session with the NOMA Magazine that though art is not very good at

advancing policy, it can help to better understand the world and the place of human beings in it. He opines that art can address a number of slippery questions on climate change like:

1. How to make major decisions about the future in this endangered world, when we know what is coming?
2. What does it mean to live in a state/ world beholden by oil and gas interests?
3. How do the fears about the future shape the way in which we think about the present? (“Q&A: Losing Earth Author Nathaniel Rich Addresses Climate Change at Friday Nights Lecture”)

Rio Fernandes, in an article entitled *The Subfield that is Changing the Landscape of Literary Studies*, quotes Richard Crownshaw, Senior Lecturer at the University of London, in saying that novels on climate change are a tool to explore how climate change is continually subjected to a form of “cognitive dissonance”(3) and therefore can change how we fail to think about the matter or displace the problem onto the future generations.

Speculations on the nature and challenges of climate change fiction have been rife among the scholars of literature for some time now. The major hurdle in theorising climate change literature is that the issue is still evolving and is achieving unprecedented scalar dimensions. Timothy Clarke says that the lack of climate change criticism has “more to do with the novelty and scope of the problem than with personal failing, a measure of how starkly climate change eludes inherited ways of thinking” ( 10-11). He goes on to state “literary criticism rarely directly addresses the topic (of climate change) in interpreting literature and culture. It is mostly at issue only obliquely or implicitly. This must be set to change” (22).

### 1.6.1. History of Climate Change in Literature

The depiction of the relationship between man and the environment has been a trait present in literature from the beginning of the history of literature. It can be said that the Holy Books framed the nature of the relationship of man with the environment. Lawrence Buell has said that the First Book of the Bible is the origin of man's concept that nature can be subjugated and ruled over by man. God's dictate to master and subjugate all living forms on the surface of earth might have initiated the Western notion of man's superiority over all other living beings. However, several tribal cultures could be seen to propagate the complementary existence of man and nature even then.

During the Early Middle Ages, nature can be seen represented through physical, spiritual and religious notions by authors like Geoffrey Chaucer. Chaucer's *Sir Gawain and the Green Knight* depicts the binary oppositions of human- non human, hospitable- hostile, inhabited-wild. Sir Gawain represents the typical mediaeval mindset which condemns nature and regards it as a commodity to be possessed. The human race as represented by Sir Gawain sees each and every element of nature as an enemy to be defeated. Green Knight, on the other hand, personifies the wild nature.

During the Elizabethan Age, Shakespeare ascribes positive qualities to the natural sphere and his vocabulary is significantly noteworthy for its abundance of words pertaining to nature. The seventeenth century witnesses John Evelyn giving out a warning against deforestation and the necessity to formulate laws for protecting the woods in his *Sylvia or A Discourse of Forest- Trees*.



The Romantic era saw a great rise in environmental literature as a side effect of industrialisation and the resultant environmental pollution. It is during this age that the issue of species extinction came to be discussed for the first time in literature. Thomas Malthus's "Essay on the Principle of Population" (1798) drew attention to this issue. *The Natural History of Selbourne* warns against excessive hunting of species like the red deer and partridges and some other local species which were considered to be on the brink of extinction (White 401). Although most of the writings during the time were nature writing, some of them definitely reflected social and environmental concerns. It can perhaps be said that the actual forerunners of early ecocriticism can be traced back to British Romanticism. During the Victorian era, Charles Dickens made strong contributions towards creating environmental awareness, when industrialisation was full-fledged. Dickens' keen awareness of the destructive potential of technology can also be seen depicted in most of his works. Modernism saw Joseph Conrad come up with vivid and vibrant depictions of nature. Conrad was insistent in representing nature as a superior force and underlines the fact that humans can never reach or overwhelm the superiority of nature.

American ecological writing finds Henry David Thoreau spearheading it and he is seen as the founder of American nature writing. Thoreau's *Walden* gave rise to a new style of value-oriented writing in America. Ecocritical writing boomed in the United States with the founding of Association for the Study of Literature and Environment (ASLE) in 1992. The establishment of the ASLE can be seen as a crucial initiative to bring together environmentalism and the humanities.

### 1.6.2 Literature on Climate Fiction

Climate Fiction as a genre is slippery and fluid in nature. Speculations as to whether it is a subgenre of science fiction or is it an independent genre by itself is still in progress. The fact that it comes under the overarching critical discipline of eco criticism is perhaps the only measure approved unanimously by thinkers all over the world. Fiction considered to deal with climate change can often be seen branded under names like “dystopian”, “speculative”, “apocalyptic”, “post-apocalyptic” and several others. Significant overlaps of these genres can also be seen in climate change fiction. For instance, post-apocalyptic novels which almost always represent undesirable futures inevitably fall under dystopian fiction. The fact is that climate change can occur under all these and several other categories due to its all-encompassing nature.

Adeline Johns Putra in the article “Climate Change in Literature and Literary Studies: From cli-fi, climate change theatre and eco poetry to ecocriticism and climate change criticism”, says that “climate change fiction names an important new category of contemporary literature and a remarkable recent literary and publishing phenomenon, although it is not necessarily a genre” (2). In fact, attempting to limit climate change to a genre would result in serious handicap in the representation. The phenomenon of climate change being of such enormous spatiotemporal scale, hypostatizing it into a genre or canon would be delimiting.

Climate fiction started off by approaching the issue within the framework of the genres already in vogue like science fiction, thrillers, young adult novels, disaster narratives, apocalyptic and post-apocalyptic narratives etc. In such narratives, climate change appeared as one of the several issues addressed or as a possible consequence

of man's actions. Later on, authors began to focus specifically on the climate change issue and broadened their range of approaches. This focus on climate change occurred during the interim of 2000's to 2015-16.

Climate change, being an abstract and almost invisible phenomenon, as opposed to weather, authors unsurprisingly faced a legion of representational challenges. Capturing the complexity of issues that the phenomenon poses to individuals, societies, socio economic situations, geographic spaces, flora and fauna, politics and all other things of concern proves a daunting trial for the aspiring author. Apart from being able to influence and alter every meter in the established world system, climate change poses the double challenge of being intangible and abstract. Putra and Goodbody say that a perfectly rendered climate change novel should be able to relate this intangible phenomenon to individual human lives. "Where climate fiction meets the challenges of representing climate change, it has the potential to provide a space in which to address the Anthropocene's emotional, ethical and practical concerns" (Putra and Goodbody 229).

In the view of Goodbody and Putra, holding fast to a specific definition of climate change fiction as fiction that deals specifically with the climate change issue will exclude novels that do not explicitly mention it. Several works have been produced which do not directly mention or name climate change but address the issue indirectly. Species extinction and the ecological aftermath of it for instance, do not deal directly with climate change but it definitely points at the issue. Atwoods's *Maddadam Trilogy*, celebrated as a climate change novel, rarely mentions the term climate.

It can be said that all narratives that depict how human actions have irreparably impaired the global natural environment imbue climate change inevitably into the narrative even though it does not always carry a thematic emphasis or take a substantial role in the plot. The growing concern on global warming has resulted in a definite increase in the number of works that deal directly and indirectly with the issue of climate change in recent years. However, this does not reduce the significance of earlier works such as *The Purchase of the North Pole* (1889) by Jules Verne and *Mountains Oceans Giants* (1924) by Alexander Doblin. In fact during the 1950's to 1960's a new wave of what Jim Clarke calls the 'proto- climate- change' fiction emerged with the works of J G Ballard and the Japanese author Kobo Abe. J G Ballard's *The Drowned World* (1962) and *The Crystal World* (1966) took a climatological approach to apocalyptic dystopia in an era before the world began to recognise and be aware of global warming and climate change. Such early works depicted efforts to change the climate for the better, the difference being that they focused on non-anthropogenic climate change. There have also been early works that have depicted anthropogenic climate change. Ursula Le Guin's *The Lathe of Heaven* (1971), Arthur Herzog's *Heat* (1977), George Turner's *The Sea and Summer* (1987) etc. are prominent examples. Putra and Goodbody observe that the surveys made on the development of climate change fiction have identified these works, depictions of both anthropogenic and non- anthropogenic climate change, as heralding the climate fiction genre. In any case, they provide apt prototypes for the portrayal of climate change to the contemporary authors.

The 1990's witnessed increased awareness on the issue of climate change among the population and international political efforts began to surface. A collective anxiety on global warming was recognised in this phase. Fiction kept pace with all

such socio-political alterations coming about in the world on the climate change issue and can be seen depicting the patterns of discourse development on the issue.

The Presidentship campaign of Al Gore, one of the few politicians at the time to understand the seriousness of the climate issue, acted as a strong boost, mounting climate change awareness all around the world. The tension between this growing awareness of the issue and inaction on it in scientific, political and public fronts incited climate change narratives. Climate change thus became an issue that demanded perspective intersection of science, politics and society and imagination is one of the mediums that could bring an assemblage of all.

Climate change narratives, though in the beginning frequented the themes of catastrophic and dystopian stories, have in recent years begun to depict pragmatic settings picturing themes such as climate change denial, scepticism about political motives, petro culture, risk narratives etc. The theme has thus struck a promising path of development worthy of critical investigation.

On discussing the ways of representing climate change in literature, Putra and Goodbody mention the broad distinction of the thematic paths of climate change novels made by Sylvia Mayers. She classifies climate change novels as ‘anticipatory’ and ‘catastrophic’. The former presents a time zone of the present or near future and depicts events that might lead to possible climate change catastrophes and the latter presents a future apocalyptic or post- apocalyptic world depicting the aftermath of a climate catastrophe.

The representational difficulties faced by authors depicting climate change has been discussed by Adam Trexler, Astrid Brake, Putra and Goodbody. They have done detailed analysis on how literature can overcome such challenges through innovative



representational and narrative techniques. Trexler and Astrid Brake studies how climate change novels draw on the prevailing generic traditions of apocalypse, flood narratives, polar exploration narratives etc. to depict the theme. Almost always, an overlap of realistic and futuristic can be seen in many climate change novels, for example, T C Boyle's *A Friend of the Earth* (2000), Jeanette Winterson's *The Stone Gods* (2007) and Nathaniel Rich's *Odds Against Tomorrow* (2013). Climate change might occur in the setting, plot or character or all these and it affects psychological, emotional, physical or political experience.

Timothy Morton, while discussing climate change, assigns climate change to the category of 'hyper objects'. In his book *The Ecological Thought*, Morton introduces the term 'hyperobjects' to describe objects or concepts that are so massively distributed in space and time across the world that it evades all kinds of measurements. Morton defines hyper objects as "things massively distributed in time and space relative to humans" ( 4). For Morton, hyper objects are real objects that are difficult for humans to understand. He includes global warming among the various things in his list of hyper objects. The relative inaccessibility of hyper objects to humans, results in a deep decentering of the human species, which for Morton is the essence of ecological thought. Hyper objects deconstruct the notion of human superiority by existing beyond the terrains of human cognition. However, with regard to representing climate change in literature, Morton identifies that the difficulty in representation leads to a further issue of reinstating anthropocentrism. Elizabeth Boulton, in her review of Morton's reflections states,

The issue with climate change fiction in relation to hyper objects is that being a hyper object, climate change demands innovative narrative strategies.

Authors are forced to reframe the problem within a manageable time and

space scale. This will inevitably lead them to reduce their narrative to the effects of climate change on humans and thus reinstate the anthropocentric arrogance that is actually critiqued in the first place. (Boulton 6)

Timothy Clark, in the article “Derangements of Scale” brings forth the idea of a “hypothetical scale” (160) on top of the personal and socio- historical scales that literary critics typically use. This scale adopts larger spatial and temporal scales like half a millennium and the whole earth. On the hypothetical scale, a character becomes a physical entity that represents “not the personality, but the foot prints” (Clark 161). Such a reading or narrating can depict how humanity has become a geological force and has contributed to the climate change phenomenon.

Adam Trexler in *Anthropocene Fictions*, details the hurdles placed before an author of climate fiction –

1. Which set of predictions should the novelist follow?
2. Which time zone should the novel be set? – In the near future, where the changes must be harder to discern or the distant future where the changes are most likely to become undeniable?
3. How do the most dynamic and ever-changing prophecies about the warming, heat waves, droughts or the Gulf Stream affect the novel’s imaginative possibilities?
4. Is it permissible to oversell the threat or to compress the timescale to provide more dramatic possibilities?
5. If climate has indeed changed in the fictional future, how are the characters to know about it? The author will have to create a scenario where scientists explain

things to a new generation not familiar with the constancy of nature that existed in an unknown past.

6. But what if the situation is such that the scientists, media or all agents aware about the situation have already been decimated?

7. What should the novel focus upon – the human agency in bringing about the climate catastrophe or the meteorological details of the future climate?

The major challenges before the novelist in depicting climate change as listed by Adeline Johns Putra and Axel Goodbody are

1. Climate change is primarily a discourse constructed by the rational discourse of science. Therefore, it will naturally be difficult to present with authenticity by an imaginative medium.
2. Climate change occurs outside the immediate experience.
3. A scientific discourse shaped by intense observation, experimentation, statistical analysis and peer review evades narrative drive and imaginative appeal.
4. Climate change is not just a global environmental phenomenon but a global ecological one.
5. The issue has indefinite spatial dimensions and the time scale extends over millennia, thus making it beyond all angles of human perspectives.

Juliya Leyda in a talk titled “The Cultural Affordances of Climate Fiction”, says that cultural productions on climate change can give insight into the “structures of feeling” that circulate around it. She traces the structure of feeling from the concept devised by cultural theorist Raymond Williams and says that affects, emotions and feelings are not only individual, cognitive and/or psychological events, but also often intricately

connected to the social and historical world. Leyda talks about how some works function as “climate unconscious” by not overtly mentioning climate in the text but informs the structures of feeling.

Schneider- Mayerson talks about how in the 2000’s environmentalists rightly asked about the dearth of literature on climate change and after a decade, the number of works on climate change showed a surprising rise. Explanation for this can be the increasingly obvious manifestations of climate change across the world. The eco political value of environmental literature is also a key subtext for the growing interest in climate fiction. They quote climatologist Judith Curry who stated that “fiction is a way of smuggling some serious topics into the consciousness of readers” (Mayerson 483). They also mention the divergent responses of liberals and conservatives to climate change literature and the ability of environmental narratives to stimulate real world conversations and influence behaviour.

On conducting the survey, Mayerson comes to the impression that problems with coming to a conclusion about climate change is

1. Various books on climate change come under a range of styles and genres – realist, thrillers, post-apocalyptic etc.
2. They differ in temporal spaces – past, present, future, distant future etc.
3. Authors offer conflicting perspectives on the responsibility of climate change, its consequences and the recommended responses.

Kathryn Yusoff and Jennifer Gabrys, in the article, “Climate Change and the Imagination”, states three distinct temporal and spatial imaginative framings of climate change – the futurity of climate change, adaptive strategies and critical engagement with the practices of climate science.

### 1.6.3 Literature on the Anthropocene

The concept of the Anthropocene has been perceived to be read in close connection with climate change. Anthropocene is considered as the geological epoch wherein humans as a species has become a crucial geological force which has brought about fundamental changes on the earth's functions. Climate change has been considered the most salient manifestations of the Anthropocene. Discussion of the Anthropocene is concomitant while discussing climate change. It will be advantageous to perceive climate change within the framework of the Anthropocene. The epoch of the Anthropocene characterises the primacy of the human agency and how the human species has become a geological force influencing and altering the course of the world.

The point of the beginning of the Anthropocene has been contested by several thinkers. The International Commission on Stratigraphy's Working Group on the Anthropocene identified the mid-twentieth century, the beginning of the nuclear age and the Great Acceleration in greenhouse gas emissions, as the official start of the Anthropocene. However, several other thinkers consider the beginning of the industrial age and the onset of the Industrial Revolution as the commencement of the Anthropocene. This would bring into focus the initiation of the burning of fossil fuels in the late eighteenth century and the consequent increase in emissions and the resultant change in climate patterns. Timothy Morton says that the end of the 'world' as a concept happened in 1784 when James Watt patented the steam engine. He calls the event "the inception of humanity as a geophysical force on a planetary scale" (17). Morton's perception of the term goes well with the idea of the Anthropocene. Stef Craps and Rick Cronshaw in the introduction to the collection "The Rising Tide of Climate Change fiction" state that regardless of the precise date of the beginning of



the Anthropocene, it is a given that anthropogenic climate change is a foundational trait of the epoch which is marked by the geophysical agency of humanity.

The beginning of the Anthropocene is not just a moment of biological, geological, environmental transformation. It should also be understood as a moment of cultural transformation as well. According to Adam Trexler, the novel places itself onto this moment of cultural transformation. Given the flexible character of the novel, it becomes “approximately” akin to the complexity of representation needed to make sense to this new complex epoch. He says in his introduction, “If culture can be used to denote human styles of building, interacting with, and relating to the world, the Anthropocene also indicates a cultural transformation (that cannot be described through a rubric of belief)” (5). Trexler recognizes that literary studies can contribute a great deal in describing and patterning enormous cultural transformations like the Anthropocene, without the risk of reducing them to a monovocal, fixed, predetermined account. Literature can analyse such cultural events taking into account all the accompanying complexities to a large extent.

Apart from these, several articles, essays, books and other works are being copiously published. Research on the various aspects of climate change is going on around the world. The role of cultural responses to climate change in helping to make people understand and relate to it is being discussed frequently in academic, political and social circles.

#### **1.6.4 Literature on the Primary Texts**

Margaret Atwood’s *Maddaddam Trilogy* has garnered substantial critical attention in various fields. Much of the critical studies on the Trilogy centres on the concepts of ecocriticism, post humanism, feminism, implications of genetic

engineering, anthropocentrism and technocentrism. The philosophical density of the Trilogy has made it a sought after topic for research and critical analysis. The themes of environmentalism and apocalypse have been dealt with by many critics and scholars. For instance, the articles “Margaret Atwood’s Environmentalism - Apocalypse and Satire in Maddaddam Trilogy” by Marinette Grimbert “Ecological Apocalypse in Margaret Atwood’s Maddaddam Trilogy” by Alan Northover and “Calculating the Costs: Effects of Land Consumption in Margaret Atwood’s Maddaddam Trilogy” by Alejandra Ortega focus on the aspects of ecocriticism and apocalyptic theme of the Trilogy. Other works such as “Maddaddam, Biocapitalism and Affective Things” by Amelia Defalco consider the ethical dimensions explored in the Trilogy in relation to the capitalist ideologies that dominate the pre apocalyptic world of the Trilogy. The concept of the contemporary era as the Anthropocene is also explored in articles like “Anthropocene Fictions: Narrating the ‘Zero Hour’ in Margaret Atwood’s Maddaddam Trilogy. The article “Ecological Grief and Therapeutic Storytelling in Margaret Atwood’s Maddaddam Trilogy” by Paul Harland deals with the significance of imagination and stories in the rebuilding of community life as represented in the Trilogy. Feminism and the role of women in the process of healing and regeneration has been discussed in various works like “Anthropocene Feminism, Companion Species, and the MaddAddam Trilogy” by Hope Jennings and “Dystopia, Feminism and Phallogocentrism in Margaret Atwood’s Oryx and Crake” by Javier Martin. Even though many of the critical works on the Trilogy are closely connected with the representation of climate change, much works on the narrative modes and solutions to climate change have not been noticed.

Barbara Kingsolver’s *Flight Behavior* has been subject to much research and various aspects of the novel such as the representation of interspecies communication

and respect, species extinction, climate change and religion have been discussed through various articles by researchers. The work has often been hailed as a significant entry into the climate fiction stream. The article “Risk, Denial and Narrative Form in Climate Change Fiction: Barbara Kingsolver’s *Flight Behaviour* and Ilija Trojanow’s *Melting Ice*” analyses the narrative forms expressing the mechanics of climate change denial as seen in the novel. Further works on analysing the narrative forms of the novel in relation to their viability in representing climate change has been observed. “An Ecocritical Study of Climate Change and Rhetoric of Fiction Genre Reconsidered—Reading Barbara Kingsolver’s *Flight Behavior*” by Shin Doo-ho can be considered as an attempt in this direction. Christopher Llyod and Jessica Rapson have written about the representation of the planetary issue of climate change through the depiction of local spaces in the article “‘Family Territory’ to the ‘Circumference of the Earth’: Local and Planetary Memories of Climate Change in Barbara Kingsolver’s *Flight Behaviour*.” Such studies touch upon various aspects of environmental issues as seen in the novel and also call for deeper studies analyzing the themes of climate change and its consequences in the novel.

A number of research papers have been published on *Prodigal Summer* which deals with the aspects of identity, search for self, community life, ethical choices, ecofeminism and the representation of the local geography. Many scholarly articles have not yet been published on *Unsheltered* and the available studies tend to be book reviews.

No scholarly article has yet been published on Lorin R. Robinson’s *The Warming: Speculative Fiction about the Human Impact of the Climate Crisis*.

## 1.7 Research Gap

Most of the research on climate change literature is centered upon the representational difficulties and the exploration of the various reasons for it. However, with more authors venturing to deal with climate change, the platform for critical and theoretical perspectives on other relevant aspects of climate change literature is being formed. The complexity of climate change as a scientific as well as a cultural phenomenon might demand a corresponding complexity in its literary depiction. The difficulties of representing climate change in fiction have been charted by various critics and scholars like Adeline Johns Putra, Axel Goodbody and Adam Trexler. They establish how climate change demands ecocriticism to move beyond its long-standing interests and adopt unconventional narrative trajectories, innovations in characterization and a reassessment of methods and approaches. This knowledge base, in the context of new works on climate change, demands further nourishment in the form of explorations on the various narrative strategies, characterization techniques and innovative approaches adopted by the authors in depicting climate change.

With the coming in of literary works on climate change a need for organised criticism and theoretical study in the field has also arisen. However, being a recently evolved but rapidly burgeoning subject, it is an overwhelming task to pick a research pathway. Research on climate change literature presents ample scope and will also lead to increased interest in the confluence of science and the humanities.

The complexity of the climate change scenario demands the critical study of literary texts as sites of exploration that unveil the socio-cultural dimensions of climate change. Such approaches are yet to be adopted in literary research and offer a rich and diverse repertoire of resources in the form of fresh works of climate fiction.

Moreover, climate change being an existential threat that imperils the life of each being on the planet, the necessity to explore the solutions to the crisis is also paramount. Literature, being a traditional and widely accepted medium of communicating abstract phenomena, holds a responsible place in dissemination of the message of ideological transformation. The absence of studies related to climate action and solutions as reflected in literary works ought to be rectified. Thus, it can be proposed that this study complements the research on climate change literature and other discourses on climate change in an enriching manner.

### **1.8 Research Objectives**

The research attempts to identify the ways in which climate change is treated in the novels of Margaret Atwood, Barbara Kingsolver and Lorin R. Robinson. The objectives are to

1. Examine the role of literature in disseminating knowledge of climate change and to study the ethical and socio-cultural significance of such works. The exploration of the treatment of climate change in literature leads to the subsidiary concerns of:
  - a. To comprehend the ability of climate change literature to stimulate real world conversations and to influence behaviour.
  - b. To understand how the novels relate the intangible phenomenon of climate change to individual human lives.
  - c. Explore how literature can produce empathy and compassion among readers to events that happen at geographically or temporally distant space.

- d. How literary and cultural texts help in creating intellectual and emotional dispositions toward the human potential for a sustainable transformation of society.
  - e. To understand imagination as a way of understanding and exploring the manifestations of climate change in culture and society.
  - f. To study the patterns of discourse development on the issue of climate change.
2. Study the representational, narrative and strategic challenges posed by climate change and to analyse the narrative techniques undertaken by the authors and the extent to which they have succeeded:

Depiction of the issue of anthropogenic climate change in literature is a matter of utmost difficulty and urgency. The difficulty arises out of the obvious complications that surround the subject – the intricacy of yoking the two seemingly parallel and entirely diverse disciplines of science and the humanities, the uphill task of getting the reality of climate change and its grave repercussions filter into the psyche of people who fundamentally prefer to ward off the subject as a farfetched possibility and the risk of getting involved in a perilous war with the global capitalists and power pillars who vehemently deny climate change and keep a muscle fortress against all attempts to reduce the excessive exploitation of nature.

- a. To study the interdisciplinary nature of the subject and how the primary texts bring about the merging of science and humanities.



- b. To understand how the three authors have tried to overcome the representational challenges in their narration.
  - c. To understand how climate change is put forth through traditional themes like apocalypse, flood etc.
  - d. To understand how the authors have drawn on the historical genres, narrative modes and images and adapting them to represent risks of global warming.
  - e. To investigate the novel narrative strategies adopted in the primary texts to represent the abstract aspects of climate change.
  - f. To study the thematic paths of climate change representation in the novels.
  - g. The study the manner in which the novels have represented the ecological aftermaths of climate change.
3. Explore the concepts of Anthropocentrism and Anthropocene and the complex socio-cultural dimensions of climate change as revealed in the works.

Anthropocentrism and the Anthropocene are two terms that are discussed in close connection with the climate change issue. It is crucial that the research undertakes to investigate how the authors have dealt with the concepts and to establish how literature can disseminate such ideas into the comprehension of the society. The attempt is also to understand whether or not human nature as such is the cause of anthropogenic climate change or whether it is the tendency of humans for capitalism and the consequential corporate and petro-culture. Climate change is one of the subjects that is extremely difficult to comprehend due to its partisan nature, complex ideological terrain and the geographical far apartness of its occurrences. However, it is crucial

that literature should address the backgrounds of political and corporate interventions and the related issues of repletion of fossil fuels, diminishing resources, unequal distribution of resources, the issue of the consequences being faced by communities that have no share in the causes of climate change etc.

The research questions that further the enquiry are:

- a. To study how the political and corporate negotiations and intervention on the issue of climate change is dealt with in the works.
  - b. Understand the transformation in the perception of the notions of the primacy of humankind.
  - c. Study the depiction of the Anthropocene in the novels and to understand how the geopolitical agency of humans has brought about biological, geological, environmental and cultural transformation in the world.
  - d. To understand how the “hyper objects” like climate change challenge human cognition and to redefine the traditional notion of the human species in the context of the hyper objects.
  - e. To understand how the authors have dealt with the complex ideological stances on climate change on the social, political and cultural levels.
  - f. To explore how humanity has become and is represented as a geological force and has contributed to the climate change phenomenon.
4. To identify the solutions recommended in the primary texts and to understand how cultural transformation is presented as the only remedy for the imminent climate change disaster. On this account, the areas investigated would be

- a. Investigation of how the primary texts understand the solutions to climate change as single steps rather than all-encompassing change.
- b. Identify that ideological transformation is the primary imperative for effective climate action.
- c. Explore how the primary texts posit that ideological transformation of one generation can positively impact the next and thereby bring forth massive climate action that seems impossible at present.

The study expects to reach the answer to the research problem by solving the stated research objectives. The analysis will be done in three core chapters wherein the first part will deal with the representation and narrativity. The section will discuss the various questions related to representation hurdles and the manner in which the primary texts deal with them. The second section will explore the socio-cultural background of climate change and will attempt deep analysis of all the socio-cultural aspects seen in the primary texts. The third section will look into the material and ideological pathways proposed by the primary texts and analyse the feasibility of such solutions.

### **1.9 Research Methodology**

Climate change, being a subject that brings science and humanities together, demands an encompassing and interdisciplinary manner of research. Close reading of the primary texts and critical discourse analysis are the predominant methods of research adopted. In order to set the socio-political and historical background of the study, analyses of political statements, news reports, documentaries and YouTube videos on climate change and interviews with authors and climate activists have been done. Besides, an in-depth reading of all the works of the three authors and a background study of the authors' commitment to climate causes will be taken up in

the subsequent chapters as themes that unravel the problems of research. All the instances relating to eco concerns, climate catastrophes, natural calamities, habitat destruction, species extinction, psycho social aspects, politics, religion and any other aspect in the primary texts that come under the umbrella of climate change will be examined in detail and will be associated with the primary texts and real-world incidents.

The sociological insights of author and activist Naomi Klein as expressed in her book *This Changes Everything: Capitalism vs the Climate*, the Encyclical of Pope Francis, *Laudato Si* and Amitav Ghosh's *The Great Derangement: Climate Change and the Unthinkable* will form the understructure of the study. The concepts put forth by major scholars on climate change like Timothy Morton, Timothy Mitchell, Adam Trexler, Michael Hulme, Kaari Norgaard, Axel Goodbody and Adeline Johns Putra will be referred to as the theoretical basis of the study. The ideological stances of Deep Ecology, which affirms an understanding of life in which the thinking of "self" must include all organisms and the systems that support them, will also be considered for the theoretical background of the study. The perception of climate risk by the public and the reaction to it especially in terms of climate change denial will also be explored through the study of the novels.

### **1.10 Relevance of the Research**

Genuine research on climate change literature and its social significance has been very meagre to date. Climate fiction and its corresponding research and theoretical discourses are in a phase of growth and therefore demands attention to its various unexplored facets. The discourses on climate change, its causes, consequences and the possible measures towards mitigation and adaptation that can be taken can be

communicated more easily through literature than through jargon filled scientific papers. Therefore, research on fiction on climate change can be understood as a relevant field of study. This study is hoped to be a relevant addition to the existing and dynamic bulk of knowledge on the issue as it investigates the relevance of culture and literature in communicating a scientific concern. The research will also be a significant addition to the stream of interdisciplinary studies that have become more substantial in the contemporary scene. The research also tries to bring forth more interest in the subject thereby boosting climate action in academic circles.

Most of the research and critical works that have been produced on climate change literature deal with the difficulty in narrating climate change and how such works are considered mere science inspired pulp fiction that visualises catastrophic futures. However, much research can be done on the ethical role of climate change literature and the narratology of such works. The social, political, economic and environmental concerns of such works and their implications for humanity are not much researched upon. Works on climate change can be understood as a crucially significant cog in the complex world of discourses on the issue that is still ruled by the ideological tug of war between climate change deniers and climate activists.

Therefore, it is crucial that more research is made upon the literature depicting climate change. Moreover, highlighting the role of literature in communicating complex climate knowledge to the non-scientific society might give rise to more such works, thus contributing to climate action and indirectly influencing changes in behaviour conducive to mitigation and adaptation.

Studies on the areas of creativity meeting science, especially on threatening issues like climate change, can have massive impacts on the collective behavioural patterns of the people. Fiction that gives logical projections of the future and that are

grounded on the scientific cognizance achieved till now can give the reader a more comprehensive view of the possible future of the planet. The works that explore the usually unnoticed changes in the climate pattern can also introduce the readers to responsible perspectives. Thus, tapping into the speculative fiction and climate fiction genres to analyse its impact on influencing productive changes in the comprehension pattern and thereby affecting behavioural changes in the masses turns out to be a fruitful research commitment.

Besides, the study holds the uniqueness that unlike other researches, where the problem is objectified for the researcher, the current research is a deeply subjective matter for the researcher, the authors and for all of humanity. Here, the researcher and the novelists become a part of the crisis and are desperate for a solution. Thus, the research has the uniqueness of being an existential struggle.

### **1.11 Interest in the topic**

The rapidly escalating concerns on climate change and the occurrences of unprecedented climate catastrophes across the world was the fundamental reason for the interest in climate change literature. However, the catalyst that led to the ultimate decision to pursue research on climate change literature was Amitav Ghosh's *The Great Derangement: Climate Change and the Unthinkable*. Being an avid reader of most of Ghosh's works, his concerns on the environment and his obsession with the non-human elements of nature had already created great interest in the mind of the researcher which reached its culmination in his seminal collection of essays which ruminated on literature or rather the dearth of literature on climate change.

However, even when further research upon the topic has led the researcher on trajectories different from that of Ghosh, the primary inspiration for the research lies

in Ghosh's works. Another significant treatise that turned attention to climate change literature was the second Encyclical by Pope Francis, *Laudato Si*. This revolutionary call for action from the leader of a huge mass of populace vouches for the crucial significance of the issue.

On a personal level, the researcher finds it her ethical responsibility to her children that upon knowing about such a serious threat confronting their future, she should not leave it for them to deal with. This research is her miniscule part in attempting to provide a safer world for the coming generations.



## Chapter 2

### Narrativity and Representation

#### 2.1 Introduction

Adam Trexler, in his book *Anthropocene Fictions: The Novel in a Time of Climate Change* discusses the representation of climate change and “all its *things*” (21) in fiction and the critical interpretation of such texts to formulate a foundation for the ever-transmuting area of climate discourse, both as an academic and atmospheric phenomenon. The italicised usage of the words ‘things’ signifies the multifarious manifestations of the cause, effects, perceptions, actions and future of climate change. The enormity and heterogeneous nature of the ‘things’ of climate change signposts its problematic relationship with imaginative representation.

Authors have attempted various narrative and representational strategies to depict climate change in literature in such a way that the works create an impact and spur socio, political and cultural transformations. However, the representation and the expectant transformations pose formidable challenges before the author, given the complex background and the evasive scalar dimensions of the climate change phenomenon.

Investigating the representational challenges and the various narrative devices employed by authors in discussing climate change becomes significant as climate change increasingly proliferates into a disturbing and debilitating concern in terms of the environment, politics, culture, economy, diplomacy and the future prospects for the earth as a whole and humanity in particular.

In the background of the dominant discourse on the massive difficulty and near impossibility of representing climate change in literature, this chapter attempts to analyse the representational patterns and narrative techniques adopted in the selected texts to make a narrative of climate change incorporating its various 'things'. The first section picturizes multifarious representations of the climate change phenomenon formulated by the various dominant sectors of the society. The dissonance and inharmoniousness of these varied representations form a foundational reason for the cacophonous nature of the climate change discourse.

The second section discusses the representational challenges faced by authors in representing climate change in fiction, especially in the backdrop of the complex sociopolitical and cultural variations of climate change perception. The significant dimensions of these representational challenges are dealt with in the sub sections.

The third section deals with strategies of representation and narrativity as found in the selected texts and the sub sections deliberate the narrative techniques adopted by the authors to integrate climate change into the narrative.

## **2.2 Representations of Climate Change: Political, Academic and Corporate**

The phenomenon of climate change has the rare characteristic of being represented on entirely parallel planes by its dominant stakeholders. Public perceptions of ideas and phenomena are understood to be shaped by the representations of it by the dominant agents of meaning creation like the politicians, policy makers, creators of scientific and academic content and the holders of major chunks of money. These sections can be categorised under the broader sections of politics, academia and the corporate sector respectively. All the three agencies form the major stakeholders of all influential phenomena and possess subsidiary meaning

making machinery like the media, socio cultural and religious institutions and career and workplace ethics and mandates. Climate change is one of the most contentious ideas that have been given different, often contrasting and controversial connotations by these agencies. As the threat of climate change gathers intensity each day affecting normal lives and livelihood of people and other organisms on the planet, the stakeholders struggle to keep up their versions of the truth, effects and magnitude of the issue. As some sections strive to stress the reality and the immense scale of the crisis, other equally or more powerful sectors can be observed to hold on to a vehement stance of climate change denialism arguing that the threat of climate change is a fabricated anxiety manipulated by rival factions for social, political and economic gains. Instances of socio political and cultural conflicts on the reality of climate change across the world are legion.

### **2.2.1 Illustration of Discordant Representation: The Political Scene**

A significant case is the environmental activism in the United States steered by former Vice President Al Gore and the conflicts surrounding it. Al Gore has been working tirelessly over a span of several decades to stamp in the conviction that climate change is a debilitating reality and it is to be tackled by strong political will and policy amendments. However, even for a person of Al Gore's political stature, public support and influence, it has been a daunting task to put forth his argument definitively. In addition to this, coordinated activity on downplaying the perception of climate change, being a legitimate condition, was also adopted by rival political factors. Al Gore, while speaking about climate change critics in an interview at the Katie Couric Web show for CBS News said, "the consensus on global warming is as subtle as it ever gets in science" ("@Katiecouric: Al Gore"). Even as Al Gore pushed forth in his representation of global warming and the consequential climate change as

a reality, equally powerful politicians kept on a diatribe on climate change theories as hoax and conspiracy. The Republican senator James Mountain Inhofe posed a very significant demonstration of climate change denial as he entered the Senate Hall with a snowball and tossed it on the floor before delivering a long speech on how the atmosphere is becoming colder when the environmentalists ramble about global warming, climate change and rising temperatures (“Senator Jim Inhofe Is Denying Climate Change”).

Inhofe had been the Chair of the Senate Environment and Public Works Committee twice from 2003 to 2007 and 2015 to 2017. Such a deliberate symbolic act by a person of political stature is bound to have huge impact on the public perceptions and worked in dampening the climate related concerns that people like Al Gore had painstakingly developed among the people. Inhofe has been as strong in his stance of climate change denial as Al Gore has been in his climate change activism.

It is interesting to note that both the discourses of climate change reality and climate change denialism have seemingly credible backing from the scientific community. Inhofe, for instance, has been found citing contrarian scientists such as Patrick Michaels, Fred Singer, Richard Lindzen and Sallie Baliunas in his numerous speeches in the Senate. Almost all of Inhofe’s speeches can be interpreted as texts representing climate change discourse as a fabricated concept invested in creating insecurity and anxiety among the public. In an October 2004 Senate speech he said, "Global warming is the greatest hoax ever perpetrated on the American people. It was true when I said it before, and it remains true today. Perhaps what has made this hoax so effective is that we hear over and over that the science is settled and there is a consensus that, unless we fundamentally change our way of life by

limiting greenhouse gas emissions, we will cause catastrophic global warming. This is simply a false statement"("Inhofe Speaks on Why Climate Change Is a Hoax").

The powerful parties invested in economic gain and support from the fossil fuel industry represent global warming and climate change as fabricated threats. Al Gore's environmental concerns were used against him during his campaign for presidency against George W. Bush in 2000, on the grounds that his plans for the climate change campaign might have derogatory impacts on the economy of the United States. This turn of representation gave way to the rise of large numbers of climate change deniers among the public of the United States.

The instances of climate change activism by Al Gore and denial by Inhofe were narrated here for the purpose of delineating the different representations of climate change in the dominant and influential spheres of the society. Climate change has the unique property of being so variously represented by major creators of meaning. Incorporating fictional representation of climate change onto such a complex and controversial fabric of representations is a daunting and confusing task. The forthcoming section attempts to discuss the various representational challenges faced by authors in the fictional representation of climate change.

### **2.3 Representational Challenges**

Knowledge production and imaginary representations of climate change are put under constant test due to its complex nature. The proclamation of the geological epoch of Anthropocene marks the collapse of the long-standing dichotomy between nature and culture and signifies the constant intervention of cultures into the system of nature. This also stands proof to the contention that human beings have become a significant geological force. As the discussion on human agency in climate change

burgeons into massive disagreements among the socio-political sphere and equally powerful discourses of climate change denial and environmental concerns drive the knowledge spheres across the world, representation of such massive tropes in fiction forms an inevitable challenge.

Apart from the socio-political debates regarding agency, diverse other concerns also hinder imaginative representation of climate change. In the light of the global scale, threatening nature and the apocalyptic prospects of climate change, questions as to the usefulness of the conventional narrative and critical practices arise. The scale, complexity and seriousness of the phenomenon demand reformulation and reorientation of narrative and representative practices. Such demands push authors of climate fiction into grim and problematic spaces.

The reasons for the slow engagement of ecocriticism with climate change has been analysed by various scholars and critics. However, as climate change barges increasingly into the socio-cultural and imaginative realms, more and more literary works preoccupied with the issue have emerged, almost all of them attempting to overcome one or several of these hurdles in their own manner. The forthcoming section discusses the various representational challenges and the representative and narrative techniques undertaken by the selected authors in their depiction of climate change.

### **2.3.1 The Problem of Science and Climate Fiction**

One of the most recurrent concerns about the imaginative depiction of climate change is the meeting of scientific facts with imagination and the question of the credibility of the facts represented. Incorporation of scientific facts is inevitable in climate fiction as knowledge of global warming and climate change is partial without

reference to the highly technical and scientific field of climatology. Moreover, effective prediction and tracing of the effects of climate change require erudition in the fields of ecology, economics, organic chemistry, physics, seismology, tectonics and several similar scientific fields. Besides, climate change is also characterised by the factor of scientific imprecision with regard to extent and speed which might lead to confusion, scepticism and denial. This scenario indicates the need to understand the relationship of scientific practices like construction of global climate models and data-based speculation of climate futures with cultural practices like writing, reading and interpreting novels.

The central problem with science and climate fiction is the pertinence of the novel, which is usually understood as a fabricated tale distinct from fact, containing scientific actualities and truths. Novel, being predominantly a fabrication loosely based on real-life situations and ideologies, can often be seen as ‘just’ imagination and thus might be dismissed as lacking credibility. This can be a crucial concern for authors of climate fiction who intend to be interpreted seriously.

Some authors incorporate scientific facts and truths into the narrative by embedding them into the narrative fabric rather than giving didactic passages. Some others attempt to present current scientific findings and speculations as normal knowledge of the future. The strategy of using a scientist character to explain or demonstrate the scientific background of climate change has also been used widely by authors. All these and a number of other strategies have been used by the selected authors in attempting an easy and natural combination of science and fiction. Further study of the narrative strategies used in engaging science in fiction has been done in the sections on narrative technique.



### 2.3.2 Necessity to Adopt Apocalyptic or Dystopian themes

A frequent contention placed against climate change fiction is its apocalyptic or dystopian nature. As the major aim of climate change literature is to evoke awareness and a level of anxiety among the readers in order to spur some environment concerned activism, apocalyptic scenes and dystopian themes become the most appropriate pattern of narration. As Lawrence Buell argued in *The Environmental Imagination* that apocalypse is “the single most powerful master metaphor that the contemporary environmental imagination has at its disposal” (285). Apocalypse acquires the power to compel reader interest and subsequent action as it possesses what Greg Garrard calls ‘proleptic quality’(97)- the ability not just to predict future but also to bring it into reality in readers’ imaginations. He observes that in order to prevent disaster, it is necessary to create a sense of crisis in the socio-cultural perception. Seen in this light, as knowledge of climate change is not enough to create a sense of crisis due to its slow pace of development and wide range and far apartness of consequences, it becomes necessary that fiction adopts a method, such as the apocalypse, that helps in creating a sense of crisis (Garrard).

However, apocalypse and dystopian imaginaries carry obvious negative connotations. The clearest and simplest demerit of apocalyptic and dystopian literature is that it has the probability to evoke disinterest and diffidence among the readers. Here occurs a possibility that the readers might actually stop thinking about and acting on climate change, as against the desired outcome of productive climate action. Taking this on a larger perspective, the doomsday and apocalyptic outlook can even undermine possible meaningful political and policy responses addressing climate change, as there is the question of doomist narratives endorsing a sense of fatalism among the public and policy makers and make them disillusioned rather than inspiring

productive action. Apart from disillusioning the readers, with future environmental disasters becoming a common trope in fiction and film, eco-apocalyptic narratives confront the additional trials of trivialization and spectacularization, which leads them to lose much of their ability to inspire fear or activism.

Martha Nussbaum in “Poetic Justice: The Literary Imagination and Public Life” argues that literature is formally equipped to “construct empathy and compassion in ways highly relevant to citizenship” (4). Similarly, Astrid Bracke analyses how Erin James in the work *The Storyworld Accord*, states that the productivity of a narrative derives from its “ability to make readers immerse themselves in the lived realities of geographically and culturally distant humans” (102). However, apocalyptic and dystopian literature do not possess the ability to evoke empathy and compassion nor can it help readers to immerse themselves in a lived reality, as the apocalyptic image itself causes distance and a sense of defamiliarization. Literary works that induce fear and pessimism themselves can lead to denial and anti-environmental ideologies as their main effects are fear and pessimism. Gesa Mackenthun in the article “Sustainable Stories: Managing Climate Change with Literature ” argues that climate anxiety and eco terrorist narratives are unproductive as they cannot give an empowering effect to the reader. Moreover, instead of imaginatively preparing the reader to cope with a climate situation, they work more effectively in training readers to make ill guided political choices. Gregers Anderson in *Climate Fiction and Cultural Analysis* states that disaster narratives tend to be reductive as a viable cultural response to climate change and that multifarious nature of anthropogenic global warming “call for cultural analysis that takes other kinds of imaginaries as well” ( 4).

Lawrence Buell, in his work *Environmental Imagination* suggests that images of doom are necessary to avert probable doom by creating awareness and action. As the factors of incomplete and contented knowledge about climate change phenomenon and the tendency to ignore or deny the presence of the threat exist strongly in the society, shocking dystopian settings and apocalyptic scenes become necessary tropes in the imaginary representations of climate change when it is intended to create productive action.

However, yet another complex factor about the climate change phenomenon further problematizes even the apocalyptic depictions. Frederick Buell writes about how even apocalypse narratives become insufficient in portraying environmental concerns, especially climate change. The nature of global warming and climate change is in a constant state of flux and their environmental manifestations change shape in a short span of time. For instance, flash floods, forest fires, droughts, incessant rains, landslides and other consequences of climate change become more frequent and stronger than they were a decade before from any point of time. Thus, as the ecological crisis keeps on evolving, narratives about them will also be expected to change. Frederick Buell states that as climate change has actually begun to affect day to day realities, narratives of “dwelling in uncertainty”( 18) should be fashioned to portray it. However, it can be observed that authors are managing to portray this aspect of dwelling in uncertainty with a hopeful and optimistic turn. The section on narrative techniques discusses how the selected authors try to eliminate the dystopian nature of being in uncertainty and how optimism and hopefulness is infused into the narrative of the primary texts. The section Regeneration through Hope (4.3.5) in Chapter 4 carries further elucidation of the topic.

As an extension to Buell's observations, it can also be argued that seemingly horrific descriptions of loss of living spaces, livelihood and disruption of family structures, as represented in apocalyptic narratives will create a sense of inequality of representation, as horrific stories of climate change refugee crisis, lack of resources and health care facility, poverty and malnourishment have become normal in some parts of the world while some still continue to debate the authenticity of climate change discourse. In this scenario, as apocalypse is used to represent a probable future, the use of the technique also becomes problematized. Thus, it can be argued that factoring in the current developments in the environmental crisis, fiction should adopt methods other than apocalypse and dystopia to portray the inequality of the consequences of climate change. Further development of this thought is made in Chapter 3, which deals with the socio-cultural dimensions of climate change.

Breakdown of civic institutions is a main apocalyptic trope and all major authors of climate fiction, including Atwood, have portrayed the disintegration of the family unit and social structures of administration and security. Whereas the collapse of societies is intended as a warning about possible real-life developments, it is often portrayed without any accompanying imagination of new social structures, which might further lead to disillusionment in the reader. Atwood has attempted to bring about a turn in the, thus dystopian nature of the climate change novel by the symbolic suggestion of a new and more sustainable social order that deconstructs anthropocentrism and reinstates biocentrism. This positive deviation given to apocalyptic climate fiction will be discussed in detail in the fourth chapter.

The same factors that make authors adopt apocalyptic and dystopian narratives also compel them to set their plots in a future time. As most of the effects and consequences of climate change are not directly perceptible in the present time and as

the present environmental crises cannot easily be connected to past climate alterations, authors will have to imagine a probable future grounded on the contemporary scientific predictions on the climate change scenario. This necessity for extrapolating into the future is discussed in the next section.

### **2.3.3 Necessity to Extrapolate into Future**

Climate change as a social, cultural, environmental, and scientific phenomenon has the uniqueness of being defined by its relationship to the future. All discourses on climate change in all disciplines whether science, humanities, cultural studies or media, are characterised by bleak warnings about the future. All the narratives on changing climate, its causes, human contribution to it and the consequences lead ultimately to a dystopian future. Therefore, in fiction, the repository of instances, images and symbols to be depicted is seriously limited for the contemporary period and the authors will have to resort to depicting a future world to bring home climate change. Imaginary depictions tend to be futuristic and dwell in the consequences of climate change rather than its contemporary ramifications. If the author tries to depict the present of climate change, he /she will confront difficulties in selecting appropriate images, instances and characters that can actually impact the psyche of the reader.

Moreover, while depicting the future scenario, wild speculations about the social structure, administrative system and the political background of the world have to be done. As an extension, the author will have to adopt a stance supporting or rejecting particular socio political or religious structures of the present for the causative depiction of future. This also might lead to lack of credibility and accusations of bias and subsequent loss of readership.

Yet another issue is that while extrapolating into the future, most novels tend to focus on the decline of existing social and political structures as this seems to be a credible method to point towards an undesirable future. However, while depicting the disrupted social structure or governmental collapse and anarchy, the focus tends to be on such sociopolitical issues downplaying several causes and effects of climate change. In such novels, Adam Trexler states that climate change is relegated to the background as a mere setting (121). For instance, several futuristic and avowed climate change novels like Kim Stanley Robinson's *Forty Signs of Rain* (2004), Paulo Bacigalupi's *The Windup Girl* (2009), Ian McEwen's *Solar* (2010) and Nathaniel Rich's *Odds Against Tomorrow: A Novel* (2013) are all set in the future and pertain to structural collapse of some kind and the conceptual and ethical conflicts occur in the social, political and corporate spheres rather than directly being connected to the environment or climate change. Such texts, Trexler comments, "fail to represent the politics of climate change while covertly willing a new political climate" (121).

Most climate change novels are set in a futuristic scenario wherein the author imagines a mostly undesirable climate altered world. The undesirability of the world depicted is expected to shock readers into concern for the environment. However, just as in the case of apocalyptic and dystopian narratives, the unwelcome prospect imagined for the future can disillusion the readers. Yet another concern is that being set in a future world, the speculations might seem far-fetched and too spectacularized. This leads to climate fiction being considered shallow, fantastical narratives without genuine social and environmental concerns and stands the danger of being trivialized.

Among the selected works, the *Maddaddam Trilogy* by Margaret Atwood and *The Warming* by Lorin R. Robinson resort to futuristic scenarios to represent climate change. However, both authors attempt to rectify the flaws by imagining regenerative

and hopeful outcomes. Margaret Atwood's 'ustopian' stories and Lorin R. Robinson's thread of perceptive use of resources and technology are significant instances. They also lend credibility to the narrative by projecting logical and verifiable speculations on the future. Kingsolver too ends all the novels with a ray of hope and hints of renewal and regeneration. Avoiding catastrophic images, however, seems to be a difficult option for most authors. The politicised nature of the climate change issue further complicates the depiction of a future climatic scenario. The forthcoming section discusses the challenges faced by the author due to the politicised nature of climate change.

### **2.3.4 Politicised Nature of Climate Change**

Climate change is perhaps one of the most politicised subjects circulating in the contemporary world. The deeply complex political background of the phenomenon was denoted in the section detailing the problem of representations of climate change. Climate change is similarly problematic in the social, economic, cultural and personal spheres too. Effective climate action means disrupting the deep-rooted systems in all these spheres as climate change is equally implicated in matters like depletion of ozone layer and fracking to the daily food habits and commute of people.

*This Changes Everything: Capitalism vs. the Climate*, states that "the legacy of market fundamentalism and the much deeper cultural narratives on which it rests,[still] block critical, lifesaving climate action on virtually every front"(Klein 63). This legacy of materialism guides all the political and diplomatic policy making, thereby resisting climate action.

The imaginary representation of climate change becomes complicated as the author will have to make a choice of which aspect to represent and within which, which side to take. For instance, rooting for alternative energy sources can squarely place the narrative into the midst of the chaotic oil and fossil industry controversy. The economic implications of alternative energy resources are massive as it might affect not only the corporate industry and the financial and military back up of countries, but also might lead to loss of occupation for millions across the world and disrupt the daily lives of several people. If the author tends to ignore or just touch upon the subject or, in rare cases, justify the fossil fuel industry, the danger of being biased or trivialising further complicates the issue. Therefore, taking a stand might prove a daunting task for the author. All narratives tend to be inconclusive given the contentious nature of the subject. Thus, the deeply politicised nature of climate change proves to be an intimidating hurdle for the author as well as the serious reader of climate change fiction.

### **2.3.5 The Problem of Genre**

Infusing a hyper object like climate change into a particular genre is an almost insurmountable challenge for the author of climate change literature. Even though the term 'climate fiction' or 'cli fi' has been loosely attached to the works portraying climate change in recent years, the term has not yet become an established genre with defined generic characteristics. As climate change is interdisciplinary, multidimensional, multiscale, complex and politicised, the subject transgresses generic boundaries and tends to occupy spaces of various genres. As futuristic possibilities based on current scientific and statistical facts form a major mode of representation, science fiction becomes a primary genre to process climate change. Similarly, the various facets of climate change require the adoption of various generic



formats like fantasy and horror. However, none of these genres are capable of portraying the complex socio-cultural and psychological scenario of climate change that includes issues like environmental refugee crisis, climate anxiety, climate guilt, unequal and unfair distribution of consequences and climate change denial.

Thus, the author aspiring to depict climate change will have to confront the issue of having to deal with multiple generic factors and still not being able to bring in all relevant factors. Moreover, when resorting to genres like science fiction, horror and fantasy, there occurs the additional danger of the works being not taken seriously or relegated to the background as mere entertainers. Thus, genre becomes a serious narrative hurdle for authors while depicting climate change. The problem of genre extends itself to the related and equally serious issue of the problem of scale. The next section discusses the problem of scales in climate change literature.

### **2.3.6 The Problem of Scale**

Timothy Clark states that the dominant modes of literary and cultural criticism are blind to the scale effects of climate change in ways that need to be addressed. He speaks about a “widespread crisis of scale” (148) that exist in the current scene. The actual scale of the climate change issue is so massive that thinking about climate change is equivalent to thinking about ‘everything at once’ (148). Clark begins the article by giving the reader a thought experiment wherein the reader is asked to imagine himself in a strange place where he is supposed to attend a meeting in a short time. He asks a ‘friendly looking stranger’ for the way and he gives him a map in which he says that the whole town is there. Opening the map, the reader finds that it is of the whole world and to pinpoint a street in a small town in that map was

impossible. Clark concludes that the map provided was ‘simply the wrong scale’ (148).

Clark makes the point that this issue of ‘derangement of scale’ (148) is something that the current literary and cultural representation of climate change is grappling with. This he understands as one of the core challenges in traversing the Anthropocene. To wade through the issue of climate change in the Anthropocene, the subject is not just the human species but the sum of all the entities that form the earth and even the universe like the non-human species, flora, terrains, water bodies and several others. Thus, this challenge of scale in climate change cannot be dealt with by just thinking globally but only by thinking across all the scales.

The question of scale includes primarily the spatial and temporal scales. Climate change being a global issue that transgresses all known measuring scales geographically, socially and culturally poses a massive spatial scale issue to the writer. The uncertainty about the actual beginning point or the span of the consequences poses an equally greater challenge of temporary scale. Moreover, the fact that the world or humankind has not encountered a crisis of such massive coverage and large-scale repercussions at any point in the past creates yet another challenge, as it deprives the author of a reference point or a previous model to simulate. Thus, the problem of scales can be understood as a foundational challenge in the representation of climate change.

## **2.4 Conclusion**

As authors need to represent climate change as a global, networked, complicated and controversial phenomenon, the conventional methods of ecocriticism like placing the incidents on the background of the environment or the symbolic

representations of environmental abuse and exploitations are not likely to hold. In climate change, the environment ceases to be a backdrop and comes to the forefront changing in itself and affecting the plot and the lives of characters. Therefore, in order to represent such a condition, innovations in narration, plot structuring, setting and characterization is called for. Such creative complexity demands from the authors a reassessment of the methods of representation and approach.

## **2.5 Narrativity**

Given the multifarious background of the many ways in which climate change can dissuade and challenge an aspiring author of climate change literature, an analysis of the various narrative strategies adopted by authors in representation of climate is in order. Narrativity is a seminal point of investigation for literary scholars engaging with climate change literature. Being a culturally, as well as scientifically complex process and possessing an immensity of scale both spatially and temporally, imagining climate change requires native innovations and decisive breaks from conventional narrative modes. As discussed in the previous sections, apocalyptic and dystopian narratives and extrapolations into the future are staple tropes of representation. However, even within these limited narrative choices, authors are attempting to steer away from debilitating doom stories and pessimistic tidings. The forthcoming sections discuss the various narrative techniques used by the selected authors in representing climate change and in the process attempts are made to answer many of the questions put forth in the section on representational challenges.

### **2.5.1 Embedding Climate Change**

Some authors try to infuse climate change into the narrative without bringing it forth as a main theme. However, as each and every aspect of the story is being

affected by the changing or already altered climate situation, climate change inevitably becomes a preoccupation for the reader. This manner of embedding climate change into the narrative is adopted by all the three authors especially Margaret Atwood and Barbara Kingsolver.

Atwood's trilogy is presented mainly through the third person narrative and looks at the world from the perspective of the main characters – Jimmy/Snowman, Toby and Ren. As the narrative oscillates between the pre and post apocalypse times, the thoughts and memories of these characters introduce the readers to the situation. Herein, even when the word climate change is never mentioned directly, its presence looms interfering in, influencing and altering the lives of the characters.

The pre apocalyptic world is divided into two sections – the heavily insulated “Compounds” – inhabited by the rich, the scientists and the technocrats and the “pleeblands” which houses the poor sections of the society and the environmental refugees. The most interesting aspect about these Compounds is that all the experiments done there focus ultimately at immortality and supremacy of the human species. The Compound community seems to be unscrupulous in their intentions and humanitarian concerns of any kind are alien to them. Anyone among them exhibiting dissent is branded as insane, Jimmy's mother being the typical example.

The future, dominated by technocratic fanaticism and blind capitalist ideologies, is represented as suffering from irremediable imbalance in the natural process of the environment. Atwood has clearly demonstrated how this imbalance in the natural way of things and excessive dependence on technology lead to corresponding imbalances in human psyche, behavioural patterns and relationships. Jimmy's complex relationship with his mother has permanently scarred his character

that he is introverted and forced to find solace in shallow relationships with a string of girlfriends. His instability and insecure nature is in fact a projection onto the insecure and unstable generation of the post climate change world.

The social structure depicted in the pre apocalyptic world has the larger discourse of climate change looming in the background. The climatic timeline of the new world divides a single day into various climatic zones. If the mornings are hot and sweltering, the afternoons are marked by heavy rain. In some places, a day will be punctuated with snowfall and rainfall. The world has altered so much so that the powerful people insulate themselves into Compounds which are protected, at least for the time being, from the ravages of climate change, through advanced technology. The major research done in the Compounds can be summarised as being focused on improving the life span and life quality of the elite human beings by rearranging and upsetting the balance of the world.

The Pleeblers form the climate refugees who face the brunt of the change. They are exposed to all the consequences of climate change and therefore lead a life mostly marked by violence and barbaric crimes. The social situation presented in the first two instalments of the trilogy presents climate change as the foundational cause for the socio-political structure. Though not mentioned directly, everything can be traced back to the climate.

Thus, as Atwood depicts a future wherein the world of humans is divided on the basis of people's ability to confront climate change, the phenomenon itself is embedded into the narrative and becomes the primary fixation without actually coming to the forefront. This embedding of climate change into the narrative helps in the perception of the future as inevitably altered by climate.

Concerns about increased human interference into the natural system are addressed directly at times. In *Oryx and Crake*, Jimmy's mother, during one of her bouts of ethical upheaval, blasts at his father, "You are interfering with the building blocks of life. It's immoral. It's ...sacrilegious"(Atwood 64). Jimmy, taking after his mother, is concerned about the way of the world in his own way, his scepticism however, rather than making him a revolutionary, turns him into an introvert unable to fathom his own confused thoughts. "Why is it that he feels some line has been crossed, some boundary transgressed? How much is too much, how far is too far?" (242)

Such transgression goes to such an extent that Crake, obsessed with his bio engineering mission, creates a new species called "Crakers" and to make way for them, annihilates the entire human race leaving Jimmy to fend for the new race. Technological advances like artificial intelligence and time defying bio engineering feats act as definitive pointers of the achievements of the human race. However, the seeming superior status attributed by these to man has blinded him of the greater, uncanny nature around him. The final destruction made through Crake's experimental "Blysspluss" pills can perhaps be interpreted as nature's manner of clearing away the filth before initiating new life. Crake, through his eccentricity becomes a medium unbeknownst to himself. Jimmy views the destruction of the humankind, or rather convinces the Crakers that the break down is in fact a purgation of the 'chaos' that had existed on earth. Crake is only the proximate cause of the apocalypse, predicted by the God's Gardeners as the "Waterless Flood". In fact, even the pre apocalypse world depicted has already brought the world to the brink of extinction through self-centred activities of man, destroying environmental balance in his wake. All these

narrative threads lead back to the central issue of human induced climate change and its consequences.

In the third novel, *Maddaddam* the major narrative plot shifts to the post-apocalyptic world and it is marked briefly by Zeb's past. The final instalment presents a confluence of all the characters and plot lines from the previous two novels. Here, Atwood depicts the struggle for survival and the ultimate solution found in hybrid existence and thus invoking a cultural and ideological transformation for future existence. Thus, it can be said that the trilogy is built upon a strong but invisible structure of climate change which forms the foundational cause for the incidents in the narrative.

Barbara Kingsolver focuses on narrating the lives of common men and women in contemporary times as being affected by the climate change phenomenon. Kingsolver embeds climate change into the narrative in a manner that is less covert than Atwood's. Her novels feature characters wondering about the runaway climate and depict their lives being affected by it. For instance, in *Flight Behavior* people meeting at a shopping mall are portrayed to be equally amused and concerned at the changing climate. Occasional observations by the protagonist like "But the weird weather must have bewildered everyone to some extent. On stepping outdoors, she sometimes had to struggle a few seconds trying to place the month of the year...It felt like no season at all" (Kingsolver 84) are instances of embedding climate change into the narrative.

The tactic used by both Atwood and Kingsolver in embedding climate change into the narrative can be hailed as useful and replicable by other authors of climate

change. This helps in keeping the theme of climate change intact without excessive use of climate change images and scientific vocabulary.

### **2.5.2 Climate Change of Insects, Animals and Plants**

Bertrand Russell in his essay “Man versus Insects” speaks about how the insect species, with their sheer numbers and miniscule size, are capable of destroying entire species of powerful and large inhabitants on earth. His predictive notion that threats to the existence of mankind can come not just from wars and violence but also from insects and microorganisms attains great relevance in respect to climate change. He also mentions the perils of transporting flora and fauna from one part of the world to another and about the boomerang effects of the use of pesticides. Russell even predicts the possible ill usage of microorganisms for evoking biological warfare. All these predictions have unfortunately become true in one or another manner. In his essay “In Praise of Idleness” he says, “If human beings, in their rage against each other, invoke the aid of insects and microorganisms, as they certainly will do if there is another big war, it is by no means unlikely that the insects will remain the sole ultimate victors”(Russell 234). Russell’s thoughts on insect kind and their often-ignored part in the organic system of the earth gels with the narrative of flora and fauna in the climate change discourse.

Viewing climate change from the side of the insects and the plants can be seen as a strategic and definitive approach to representing climate change. As climate change can affect any aspect of human and nonhuman life on earth, looking at the climate change of plants and animals would be a creative and productive form of narration as it will aid in underlining the vastness of climate change phenomenon and its ability to affect even from the grassroots. Moreover, depicting the climate change



of plants and animals, the narration aids in deconstructing anthropocentrism while analysing the effects of the phenomenon. Among the selected authors, Barbara Kingsolver mainly roots upon depicting climate change, especially anthropogenic, as affecting plant and animal life. Kingsolver's narrative proves how the human actions like excessive poaching, cutting trees for timber, game hunting, use of pesticides and unscientific methods of farming and irrigation and the consequences such as species extinction, blights, scarcity of excess of particular plant and animal species at any locality are either directly or indirectly connected to the climate change phenomenon either as a cause or as a consequence of it.

The novels represent her deep concern about a largely overlooked or ignored aspect of the environment. The socio-political systems, while waxing eloquent about the rising temperatures, melting ice caps, floods and other manifested effects of human exploitation of nature and the resultant climate change, overlook the legions of insect species facing loss of habitat, lack of food, disrupted migratory patterns and species extinction. Another and entirely opposite effect of human intervention on the ecosystem upon insect kind is that some of them tend to over-breed and become unnaturally antagonistic due to the unintended effect of chemical fertilisers. The transportation of host plants from their natural habitats for economic gains also tends to bring about unsought disruptions in the life pattern of insects which in turn disrupts the entire symbiotic system of the earth. Kingsolver, unlike most other ecocritical writers who deal with the visible manifestations of environmental degradation and the climate change phenomenon, confronts the issue of how the small inhabitants of the earth like the insects, butterflies and the small predators affect and are affected by human manipulation of the nature which indirectly, though definitely, contributes to the climate change phenomenon.

Kingsolver proves the significant yet unnoticed part of the flora and fauna in keeping the environmental balance in her works. Most of the works focus on a particular species or more of flora and fauna and depicts how human intervention into the nature's system disrupts the life pattern of the species and how it becomes a threat to humans. The author has made extensive and recurring use of animal and plant imagery to depict climate change and anthropogenic environmental damage. The presence and significant role of non-human beings is common for all her novels. If *Flight Behavior* focuses on waylaid butterflies, *Prodigal Summer* has coyotes, chestnut trees, moths and several other birds and insects. Spiders, moths and carnivorous plants form a substantial part of the narrative of *Unsheltered*.

*Prodigal Summer* is set in the Zebulon valley of southern Appalachia and focuses on the disrupted habitat and near extinction of coyotes. In another plot line the focus is on chestnut trees that are on the verge of extinction due to blight. By presenting the chestnut blight as a crucial phenomenon leading to drastic changes in the life of the people in and around the Appalachians, Kingsolver gives a subtle but very evocative representation of anthropogenic change in the ecosystem. In the 'Moth Love' plotline, Lusa's contemplations delineates how the insects are being slaughtered by the millions by pesticide use and how it indirectly contributes to the climate change phenomenon.

Yet another significant and connected idea that Kingsolver brings forth in *Prodigal Summer*, through focusing on the flora and fauna, is the worthlessness of human beings getting into the trouble of eliminating the insects and animals. At one point, Cole's brother-in-law pronounces his disbelief about how they managed to get a surplus harvest of cherries even though he skipped shooting the jaybirds this year to prevent them from finishing off the cherries by themselves.

I'm surprised you got cherry off them trees this year...As many durn jaybirds as we have had. Last spring I come over here and shot the birds all out of there for Cole, but I never got around to it this year. So, you got you enough for a pie or two anyways, did you? (Kingsolver 111)

On another occasion Deanna asks Eddie Bondo, who is hell bent on eliminating coyotes, how many times has he actually witnessed a coyote attacking the cattle. For this Eddie does not have a ready answer signalling that he has not actually seen a coyote attack suggesting that coyotes, who feed upon anything available, very rarely attacks cattle. Logging, poaching and uncontrolled use of pesticides form the major human induced troubles in the novel. These activities in turn lead to unexpected consequences such as loss of habitat and extinction of certain species of animals and plants which in turn lead to irremediable imbalance in the ecosystem. Deanna Wolf's words about predators, "They're the top of the food chain that's the reason...If they are good, then their prey is good, and *its* food is good. if not, then something's missing from the chain"(13), underlines the basic concern of the text that as everything in nature is connected to everything else and a slight imbalance in the equation (like uncontrolled logging and poaching) can disrupt the whole system. The usually unnoticed presence of small creatures like worms and beetles are also given importance in the narrative. "Beetles, worms. I guess to hunters these woods seem like a zoo, but who feeds the animals and cleans up the cage, do you think without worms and termites you'd be up to your hat brim in dead tree branches looking for a clean shot" (13).

In *Flight Behavior*, butterflies form the central symbol. The novel celebrates the beauty and astonishing instincts of the Monarch butterflies. The slow revelation of fact after fact about the extraordinary migratory pattern and how it takes three

generations of the butterflies to make one trip from thousands of miles between Mexico and Canada strengthens the comprehension of the precise construction of the ecosystem and also the immense significance of insects. The individual butterflies die on average after six weeks, but they procreate and leave eggs before they die and their descendants, inexplicably, know how to complete the journey begun by their parents and grandparents. Others again return south and gather at their winter retreat, the Mexican Angangueo. The mystery of such fragile creatures, taking up a journey of thousands of miles across landscapes, symbolises the immense strength and resilience nature has devoted to its creatures. At the same time, the fact that the change in flight behaviour of the butterflies is an indication of their near extinction due to human induced climate change shocks Dellarobia and the readers into awareness.

Apart from butterflies, Kingsolver has invested several pages to speak about sheep, giving detailed descriptions about sheep rearing, shearing, lambing and taking care of the newborn calves. Sheep farming is the main source of income of the Turnbow family and through Dellarobia's musings it is revealed how the creatures have become an unavoidable part of the family. The presence of the two border collies of the family who seem to understand even the finest changes in the mood of the human beings in the household also strengthens the narrative of man as just another part of nature. Of the border collies Dellarobia once thinks, "They would watch, ears up, forepaws planted, patiently bearing with the mess made by undisciplined humans as the world fell down around them" (Kingsolver 25).

Yet another significant non-human presence in the novel are the trees that thrive in the mountain behind Dellarobia's house which face the looming threat of being logged by her father-in-law for debt payment. Information about how similar logging has created landslides and mass destruction in the neighbourhood and around the

world is spread throughout the narrative. Dellarobia and Hester, her mother-in-law, form an unlikely union in resisting the logging, both of them showing their instinctive knowledge that logging a mountain of its centuries old trees will only lead to certain disaster. Dellarobia recounts incidents from the neighbourhood to warn Cub,

Oh, Cub. They will make it look like a war zone, like the Buchman place. Have you looked at the mountain since they finished logging it out? It's a trash pile... It looks like they blew up bombs all over it. Then all these rains started and the whole mountain is sliding into the road. (40)

The chapter presenting Hester's vast knowledge of plant species, even those that are now sighted rarely, directs the narrative to the pastoral mode making the reader mourn for species lost due to climate change.

*Unsheltered* also has the presence of animals and plants which occupy a significant part in the lives of the characters. The novel has animal and plant characters that play significant roles in the plot. The dog in the 21st century timeline and the spiders, moths and the Venus flytrap of the 19th century timeline underpins the priority given to the representation of man- nature connection by the author.

Margaret Atwood has also used animal imagery to depict the consequences of climate change. The significance of lives other than human beings is brought forth by the mere absence of all animals known to mankind. An important feature that marks the pre apocalyptic world in the Trilogy is the absence of animal species. In Atwood's imagined future, almost all animals have gone extinct and occur only on CDs and video recordings from a past era. Species extinction has made 'real' animals a fairy tale for the young generation who watch virtual versions of the animals in violent games. The only animals that Jimmy's generation know are the 'splices' which are

bioengineered organisms with genetically modified human cells. They are used to harvest human organs which will keep the humans alive even when their own organs deteriorate or stop functioning. Here, Atwood depicts the ramifications of biotechnology utilised for human perfection, control and to create a world that transcends species interdependence. The notion of anthropocentrism can be seen to be taken to the level aspiring for human immortality. The disappearance of most of the animal species has made man just upgrade to creating new species – “splices” of animals to cater to his diverse needs. By such representations, the reader is made to feel that the actual environmental apocalypse has already happened and the bioengineered pandemic is just a climax of the destruction already in motion.

The depiction of animals in the post-apocalyptic world is also significant. Herein, all the survivors are depicted to be in a constant war to save themselves from the spliced animals and to find food. Toby’s beekeeping and the unique connection she shares with the bees can be understood as symbolising the inherent oneness of human beings with nature. Toby, being good at identifying and using medicinal herbs, is a natural healer. Significantly, it is Toby who actually connects meaningfully with the Crakers and subsequently with the pigeons paving way to survival. This also indicates how being one with nature, rather than taking a human centric approach, is the best possible method of survival in a hostile environment.

The study of the fiction of Kingsolver and Atwood with regard to their use of plants and animals in the representation of climate change proves that the strategy is effective and also can be put to use in varying angles. For instance, as Kingsolver focuses on the impact of climate change on plants and animals, Atwood uses plant and animal imagery to bring in the notion of deconstruction of anthropocentrism. The aspect of species extinction has been dealt with in detail by both authors.

### **2.5.3 Cast of Characters**

Strategic casting of characters has been observed as an accommodating method in climate change fiction. It has to be noted that the term ‘characterization’ as used here means the arrangement of characters as conducive to the communication of information on climate change and not in the conventional sense. Casting characters from different sections of the society and molding their personalities gives an extent of flexibility and privilege to the author. Tactical use of this aspect of narration has been found to be effective in the depiction of climate change by the authors selected, especially Barbara Kingsolver and Margaret Atwood.

All the three authors have two main sets of characters that can be categorised as ‘Experts’ and ‘Receptors’. Experts form the knowledgeable people concerned about climate change and the receptors form the other set who are unaware and unconcerned. Thus, the flow of information is affected through conversations between the informed and concerned and the uninformed and unconcerned. This is a foundational binary in characterization that can be perceived in the fiction of all three authors. Apart from this basic categorization of characters into experts and receptors, the characterisation techniques, in relation to narrating climate change, of all the three authors are found to be distinct from each other. Therefore, for a clear perception of the characterisation techniques each author is studied separately in this section.

#### **2.5.3.1 Barbara Kingsolver**

It can be observed that Kingsolver has used characterisation as a deliberate narrative strategy in bringing out some crucial elements of climate change discourse in the novels. Instead of resorting to apocalyptic scenes and overarching concerns like fossil fuel consumption, carbon emission and bioengineering, Kingsolver tends to

dwell in the daily chores of the lay man trying to interpret how they understand and relate to the climate change situation. In all the works taken into consideration here, the author deals with characters who belong to the socially, economically or educationally underprivileged sections and tries to unveil how and why they do not understand climate change or why they resort to deny or ignore it. She also has a set of characters that credibly speak about and act upon the issue, thus bringing forth constructive dialogues between the knowing and the ignorant and thereby informing the readers too of the facts and risks. Her characters typically fall into two categories – the informed and concerned and the uninformed and the unconcerned. The characters are also deliberately crafted to represent different sections of the middle class and lower middle-class society in order to divulge the various perceptions, responses and repercussions of climate change. The forthcoming subsections discuss the manner in which Kingsolver has utilised the flexibility in casting characters to portray climate change. The way in which some characters are perceived by others is also considered here as it forms part of the character formation and also helps in understanding the perceptions on climate change.

#### **2.5.3.1.1 The Experts and the Receptors**

The three plotlines of *Prodigal Summer* feature three different sets of characters. Deanna in ‘Predators’ is a zoologist who has access to elite education and is highly erudite in her field of study. Another major character in the plot is Eddie Bondo who is skilled in farming and hunting, but is not scientifically educated about the surroundings in which he dwells and acts. The combination of both these characters strikes balance in terms of love and companionship but they are way apart in their perception of the ecosystem. Deanna leads an isolated life in the jungle working on saving the last of the endangered coyotes while Eddie is hell bent on



eliminating them. His mindset is cemented deep in the cultural construct of his community that coyotes are the major enemies of ranchers and that they are to be killed. In spite of Deanna's efforts to convince him that coyotes are not a danger to the sheep, he opts to leave her rather than accepting her ideologies.

Similarly, in the second plot 'Moth Love', Lusa is the counterpart of Deanna. Lusa is educated and city bred and relocates to the countryside for love. However, with the death of her husband, she is left with his house, farmland and a set of relatives and neighbours who are entirely different from her in perceptions and lifestyle. Lusa's love for nature and agriculture is based on her knowledge of the repercussions of unscientific cultivation, use of pesticides and deforestation. The farming community among whom she lives is concerned about climate change only in terms of the loss of crop and the subsequent economic loss. They are ready to adopt any measure to alter the situation and return to productive farming. Unlike Lusa, the other characters are unconcerned about the root cause of the incessant rains and untimely droughts. Their only concern is to protect their harvest. Here, looking at the farming community from the point of view of Lusa, an outsider helps in revealing the helplessness and insecurity that they confront by the changing climate. Lusa is an outsider and has the option of giving up the farm lands and returning to the city where her university education and her like-minded peers await. However, all other characters are limited to their locales by their traditional occupations, family and financial responsibilities. For them, breaking through the challenge is more important than investigating the root of the challenge.

The major characters in the third plot, 'Old Chestnuts', consists of two elderly people Nannie Rawlie, who stands for the informed and concerned and Garnett Walker who stands for the opposite. Walker's primary concern is the restoration of

the American chestnuts whereas Nannie Rawlie voices out the concerns about logging and pesticides. Walker resists all discussions about anthropogenic climate change, species extinction and warming and goes on in his drive to bring back the previous glory of his ancestors' forest lands. His old self is programmed to the concept of primacy of the human being and cannot be shaken out of it. Nannie Rawlie, though belonging to the same generation as Walker, has undergone a perceptive turn after the death of her daughter who was born ill due to exposure to pesticides. Rawlie's character suggests that it takes strong personal losses to make common man realise the significance of being concerned for the ecosystem. The exchanges between the characters make the crux of the novel's plot line that addresses the influence of scriptures on human actions and climate change denial.

In *Flight Behavior*, Dr Ovid Byron and his set of scientist students form the first category of the educated and the concerned. Dellarobia and her family and villagers form the uninformed. Dellarobia forms a round character as she is shown to evolve from an ignorant and self-centred person to an informed person ready to take responsible positions on climate action. In contrast to Eddie Bondo's character in *Prodigal Summer*, Dellarobia painstakingly pulls herself out of the slumber induced by her socio-cultural setup and emerges to act on climate change. The attitudes of characters like Cub, Hester and Bear towards discussions of climate change act as pointers towards the basic reasons for inaction and indifference among the common man.

*Unsheltered* also features characters in the same vein. Mary Treat and Thatcher Greenwood constitute the environmentally concerned team and Professor Cutler and Captain Landis are the major players in the self-centred environmentally

unconcerned group in the 19<sup>th</sup> century timeline. In the 21<sup>st</sup> century plot, Tig belongs to the first group and all other main characters constitute the second.

#### **2.5.3.1.2 The Isolated and Ridiculed**

Significantly, all the characters trying to be evocative about the importance of being concerned about the environment are considered as outcasts or abnormal and are ridiculed and isolated by the society. Deanna, Lusa and Nannie Rawlie in *Prodigal Summer* are all represented as isolated characters from whom others are seen to keep a distance. Deanna's reclusive lives in the forest and her spirit for saving the coyotes have made her a topic of ridicule among the villagers. Lusa is seen as an outsider from the very beginning and her attitudes, lifestyle and opinions on agriculture and cattle farming are received with scepticism by the family. Nannie Rawlie has been declared as insane by the community as a whole and is isolated and ridiculed by most.

In *Flight Behavior*, Dr Byron and his team is received with positive vehemence by the villagers. Dellarobia too stands apart from the others in her community with her air of education and lack of proper respect for the dictates of the church. Even her efforts to conform are treated with doubt and rejection.

Similarly, Mary Treat in *Unsheltered* is branded as insane for her drive for knowledge and experiments and Tig is the wayward daughter whose lifestyle and attitudes have disappointed Willa. The rejection faced by the minority of people who understand and are vocal about climate change, the human contribution and the necessity to act can be seen in correspondence to the denial put forth towards the concept itself. The people who speak out consist of a minority and those who keep silent or practice denial form the rest.

### **2.5.3.1.3 People from Different Times in the Same Location**

The casting of two sets of characters belonging to two different time periods in *Unsheltered* can also be seen as an efficient narrative strategy as it provides juxtapositions of people from different times reacting similarly to similar situations. As all the preconceived notions are disrupted, majority of people in both the narratives tend to actively deny the new realities. The people like Captain Landis and Professor Cutler, in their planned attack at Darwin's theories, form counterparts of modern-day institutional climate change deniers. Moreover, casting to real life characters like Mary Treat and Asa Grey and references to Charles Darwin, Virginia Woolf and Ulysses Grant lend intensity and authenticity to the narrative, thereby strengthening the insights put forth by the novel.

### **2.5.3.1.4 Climate Change of the Middle Class**

By moulding characters from the middle-class background Kingsolver's effort in depicting the perception, anxiety and response to climate change by the common man has been effectively delivered. The day-to-day functioning of climate change has been put forth in its various manifestations. The farmer, rancher and land owners perceive climate change as unprecedented disruptions in their lifestyle and livelihood. Statistics of greenhouse gas emissions, carbon footprints, climate finance and sea level rise are beyond their comprehension and care. Besides, by portraying outsider characters like Lusa and Thatcher Greenwood and observers like Dellarobia and Tig, the narrative succeeds in giving a detached but complete view of the life of the common man in relation to climate change. The characters like Deanna and Dr Byron who are erudite in particular fields of scholarship assist in the explanation of hard scientific facts in the narratives. Thus, it can be said that for Kingsolver,

characterisation is a prime narrative strategy in depicting the abstract facets of climate change.

### **2.5.3.2 Margaret Atwood's Characterisation**

Margaret Atwood portrays a vast array of characters in the *Maddaddam Trilogy*. The trilogy's characters hail from a wide range of socio-political, economic and psychological settings. As the narrative tends to oscillate from past to present, the characters are also depicted as belonging to different generations. The portrayal of the same characters in the pre and post-apocalyptic scenario is also significant. The trilogy also showcases the binary of the experts and the receptors in order to portray the altered climates of the future, the social conditions and at times, to voice the author's ideological stances. When Crake and Jimmy's mother give voice to the explainers, Jimmy is the major receptor in the pre apocalypse narrative. In the post apocalypse Jimmy and Toby are the major people who explain and the Crakers form the uninformed. However, the explanation done by Jimmy and Toby in the post apocalypse part stands more for the symbolic presentation of formation of knowledge, history and ideological stances. Thus, it can be found that Atwood has also made characterisation as a strategic device to depict the various aspects of climate change.

The following section discusses how all the three authors make use of a scientist or other equally knowledgeable characters as a device in representing climate change.

### **2.5.3.3 The Scientist**

An important characterisation strategy adopted by all the three authors is the casting of one or more scientist characters. The presence of a scientist aids in the seamless incorporation of science into the narrative, thus solving the issue of bringing

together science and fiction to an extent. The issue of presenting scientific facts in fiction is larger and multidimensional than that can be presented through the explanatory conversations of a scientific character. However, this can help at least in opening a dialogue and putting forth a comprehensible basis for the reader. The *Maddaddam Trilogy* portrays a number of scientist characters, both “good and bad”, while presenting the various scientific and technological feats undertaken by human kind to survive in a climate altered world. Most of the scientists depicted are shown to subscribe to the anthropocentric notion of focusing on the survival and comfort of man (in the futuristic scene the survival of the economically privileged man) by investing their abilities to developing sinister concepts like spliced animals, bioengineered food, destructive weapons and bio forms intended to eliminate masses. Another smaller set of scientists are shown to be playing cold feet or resisting being terrified at the scenario brought about by themselves. Jimmy’s mother, Crake’s father and Adam One can be seen as representing groups who have come across an ethical turn. Crake forms yet another kind of scientist character who, understanding the horror created by mankind, resolves to destroy the human race by his own brilliant bioengineered pandemic. The conversations, thoughts and actions of these characters help in making the reader understand the scientific background of the world imagined.

Among Kingsolver’s characters, Dr Ovid Byron in *Flight Behavior*, Mary Treat in *Unsheltered* and Deanna and Lusa in *Prodigal Summer* represent the scientist/ scientifically educated characters through whom the complicated scientific facts are communicated. Dr Jonathan Carver and Daliyah are the characters created by Robinson for presenting scientific facts. Thus, it can be said that the use of characters that are knowledgeable in the scientific aspects can help in the credible presentation of scientific factors.

From the analysis of the character casting methods of the authors, it can be concluded that strategic characterisation can be used as an effective tool in the representation of climate change in fiction. The cast of characters naturally involves the articulations made by the characters in the form of conversations, thoughts, memories and dreams. The next section goes on to discuss how these articulations have been put to use in climate change depiction.

#### **2.5.4 Articulations**

A major strategy of infusing climate change discourse into the narrative is to make use of thoughts, conversations, memories and dreams. All three authors studied here have also made use of all or some of these strategies in representing climate change. Among them Kingsolver has depended mostly on thoughts and conversations, whereas Atwood makes use of memories, while dreams are a major strategy for Robinson.

The detailed study of how the authors make use of these narrative devices to bring forth climate change is studied in the sub sections.

##### **2.5.4.1 Thoughts and Conversations**

Incorporating abstract realities into the thought processes of the characters can help in depicting them to a large extent. By making the characters think about how the world has changed and evolved, or how some environmental or atmospheric situation has made them change a decision, or lose an opportunity are ways to infuse the narrative of climate change obliquely into the storyline. Such thoughts, even when distanced from the particular context, can bring in a preoccupation of climate change into the reader's mindset and help in focusing the reading and interpretation process on the climate reality.

Conversations are yet another impactful narrative strategy that can help in communicating the realities, especially the imperceptible scientific and statistical concerns. The flow of ideas can be easily affected through the conversation between a knowledgeable character and an uninformed person. This section analyses how thoughts and conversations bring out the theme of climate change in the selected works and how effective the strategy is.

All the three authors have made use of thoughts and conversations as narrative strategies to communicate climate change. Atwood, as she relies on third person omniscient narrative, devotes much into the thoughts of characters. Conversations do not play much role in Atwood's narrative as in the post-apocalyptic situation most of the characters are lonely and are left to their own thoughts. Barbara Kingsolver makes use of both thoughts and conversations in the narrative, both helping in sustaining the focus on climate change. Conversations divulging the complex aspects of climate change take prime stage in Robinson's work and thoughts, especially that of the central character also aid in keeping the thematic path intact. As Kingsolver is seen to be depending more on thoughts and conversations for portraying climate change, this section intends to study her works deeply and make a surface level analysis of the other two authors.

In all the three novels by Kingsolver, thoughts of the protagonists can be found to set the background and the dialogues between the characters help in the exposition of ideas. The major part of the narrative of *Prodigal Summer* is presented through the thoughts of the main characters of each plotline – Deanna, Lusa and Garnett. The thought stream of each of them reveals key concerns in the narrative. Deanna's thoughts divulge the story of coyote hunting that is rampant in the Appalachians and how it has led to the near extinction of coyote population and as an



extension, the over breeding or extinction of several other species. Lusa's thoughts about how the native people tend to destroy insect populations in the area divulges information about how this leads to serious but invisible consequences. Her thoughts also expose the ignorance or indifference of rural populations about the aftermath of their simple actions which is yet another form of climate change denial. Garnett's ruminations reveal the history of extensive chestnut logging and the smuggling in of foreign invasive plant species for commercial purposes and the subsequent extinction of American chestnuts. Apart from these central concerns, related reflections on the extinction of other plant and animal species, crop failures, unpredictable weather and natural disasters are also presented through the thoughts and memories of the characters.

The presence of one or more knowledgeable characters whose conversations with other characters helps in the revelation of the plot and themes is a common factor in all the three works. In *Prodigal Summer* Deanna, Nannie Rawlie and Lusa play the role, while in *Flight Behavior* Dr Ovid Byron is the one who reveals the complex climate situation to the other characters. At times, Dellarobia, Preston and Dr Juliet Emerson take up the explainer role in *Flight Behavior*. In *Unsheltered*, Mary Treat plays the exponent in the 19<sup>th</sup> century timeline and Tig in the 21<sup>st</sup> century.

Most of the concerns like the contribution of human beings in climate change, common man's inability to grasp the complex language of climate change discourse, climate change denial, and public perception, attitude of the administration and insinuations of the corporate world are presented through lengthy dialogues between the well-informed character and the others. For instance, in *Prodigal Summer*, Deanna, during one of their walks through the forest, explains to Eddie Bondo how human beings have disrupted the habitat and food cycle of several species of animals

and plants through extensive poaching and other destructive activities. Deanna's sense of loss on the extinction of a lot of plant and insect species which has gone unnoticed, but have made a deep impact on the stability of the ecosystem, brings to light how much the environment is changing due to human intervention. Listening to the call of the nearly extinct magnolia warbler, which she considers "a sign and a wonder...something risen from the dead" (Kingsolver 61), she feels, "So many others never would rise again: Bachman's warbler, passenger pigeon, Carolina parakeet, Flint's stonefly, Apaema moth – so many extinct creatures moved through the leaves just outside her peripheral vision..." (61).

The fact that the disappearance of one species from a system can lead to a chain of disastrous changes is unveiled by the author through Deanna's thoughts and her conversations with Eddie Bondo.

They were watching it here in her own beloved mountains, where North America's the richest biological home was losing its richness to one extinction after another, of plants and birds, fish, mammals, moth and stoneflies, and especially the river creatures whose names she collected like beads: sugar spoon, fork shell, acorn shell, leaf shell. Sixty five kinds of mussels, twenty now gone for good. There were hundreds of reasons for each death – pesticide runoff, silt from tilling, cattle in the creek... (65)

The reason for the elimination of the river creatures was the over population of the muskrat, which in turn occurred due to the elimination of the mink, river otter and the red fox. Thus, taking away just one insignificant predator out of the equation can lead to the overpopulation or disappearance of several other species. The presentation

of such facts in the narrative gains authenticity as they are put forth through normal conversations between people in a befitting background of the forest.

In *Flight Behavior*, almost all conversations between Ovid Byron and Dellarobia are steeped in the explanation of various concerns relating to climate change. Similarly, the dialogue between Byron and the journalist, which forms a crucial scene in the novel, reveals several thoughts about the aversion faced by the scientists and their helplessness with regard to acting on climate change. The central discourse on the differences between the concepts of environment and ecology, underlying reasons for denial and several other scientific aspects are revealed through such conversations.

*Unsheltered* depends entirely on the conversations between Willa and her daughter to reveal concerns of climate change. The novel moves gradually through the development of concepts like anthropocentrism and the human contribution to climate change through the two timelines. The exposition of the central concern is presented entirely through a long exchange between Willa and Tig towards the end of the narrative. When Willa laments the imminent demolition of her house, her daughter opens her mind onto a scene of the demolition of the whole world, to which Willa and most people around her give little thought.

When Tig says, “Mom. The permafrost is melting. Millions of acres of it.” (Kingsolver 409), Willa is at a loss unable to find any connection between the melting of permafrost and her own life. Willa’s obliviousness to the rapidly deteriorating environment is presented as a factor common to a majority of the world population. “It’s so, so scary. It’s going to be fire and rain, Mom. Storms we can’t deal with, so

many people homeless. Not just homeless but placeless. Cities go underwater and then what? You can't shelter in place anymore when there isn't a *place*" (409).

Willa's instant response to Tig's exposition is not to believe any of it. This resolute attempt to close one's eyes to the unveiling reality is representative of the propensity for climate change denial rampant all over the world. While Willa, keeping with most of the world around her, hangs on to climate change denial, Tig represents that minority who perceives the gravity of the situation and gets ready to act in accordance with the demands of the situation.

Kingsolver uses Tig as the mouthpiece of this minority and explains through her words the difference between them and the anthropocentric and materialistic majority. While Zeke, Tig's brother, tries to build his life on corporate money, his wayward sister becomes a parent to his son. She decides not to get pregnant and give birth to a baby who would have to fight for resources in a collapsing world, the condition of which she describes as

The Middle East and North Africa are almost out of water. Asia's *underwater*. Syria is dystopian, Somalia, Bangladesh dystopian. Everybody's getting whether that never happened before. Melting permafrost means we've got like, a *minute* to turn this mess around, or else *it's* going to stop us. (410)

Atwood's trilogy moves through the thoughts of the focal characters Jimmy/Snowman, Toby and Ren. The author puts forth a near future based on the current socio-cultural and scientific situations. The world is unveiled through the eyes and thoughts of the focal characters. As Jimmy, Toby and Ren belong to entirely different segments of the society, their thoughts provide a cross section of the world altered by climate and its consequential challenges.

Jimmy's thoughts reveal how the elite society combat climate change and also gives deep insights into how the corporate sector can manipulate power structures and the dangerous extents to which anthropocentrism can advance. Toby represents the middle class society who is subject to the unseen machinations of the upper classes and the corporates. Toby's view of life in the Pleeblands and her perspectives on the Maddadam way of life divulges the anxieties, vulnerabilities and scepticism that might be experienced by the unprivileged in a future world made almost inhabitable by climate change and societal disruption. Moreover, her thoughts unveil the thread of healing and sustainable life. Ren is akin to Jimmy in being a compound kid made vulnerable by parental discord and lack of focus in life. Her thoughts reveal how the innards of the society can change for the worse when life does not offer any guarantees any more. The life of sex workers, pimps and lost people in an environmentally toxic world is presented in all its horridness through Ren's thoughts. However, the sense of normalcy and lack of expressive emotions featured by all these characters also reveal the depth of the issue. The indifference in the manner in which these characters think about the world makes the reader internalize the fact that environmental degradation is inevitable given the current nature of life and that the extent of the degradation is so vast that it might probably leave the future generations to be as lost as Jimmy, Toby and Ren.

Similarly, Lorin R. Robinson also depends heavily on thoughts and conversations to communicate climate change. Most of the narrative is taken forward through the thoughts of Dr Jonathan Carver who seems almost always to be preoccupied with climate change and pragmatic solutions. Difficult scientific concerns like plate tectonics and its connection with climate change are presented through long conversations between people knowledgeable in the subject. The

complex psycho social issues like climate change denial and climate anxiety are also investigated through conversations in the form of psychological counselling or arguments. Jon's final speech at his tenure committee meeting is a typical example of the author's strategy in infusing the complex thoughts about climate change into the narrative.

Therefore, on analysing the selected works, it can be said that authors of climate change fiction can make use of thoughts and conversations as an effective narrative technique to represent climate change, especially to divulge the complex scientific and psychological aspects. Thought streams and conversations form one of the most convenient and apt devices to explain climate change in fiction. This helps in retaining the originality of the narrative eliminating the chances of the narrative seeming forcible and contrived.

#### **2.5.4.2 Memories and Dreams**

Memories and dreams are used as effective narrative tools by Margaret Atwood and Lorin R. Robinson. As the plot structure of the trilogy is peculiarly designed, the narrative inevitably has to move forward through the memories of the focal characters. The first two novels follow parallel timelines narrated through the memories and present life events of the focal characters Jimmy/ Snowman (*Oryx and Crake*) and Ren and Toby (*The Year of the Flood*). *The Year of the Flood* is usually called the 'sidequel' rather than the 'sequel' of *Oryx and Crake*. The third novel, *Maddaddam*, acts as a continuation of the first two thus forming a fork-like narrative structure. In the third novel, the memories of Zeb occupy a primary space, through which is depicted the history of fossil fuel economy and the related exploitation of nature and the underprivileged humans is revealed. In all three novels, the focal

characters traverse liminal spaces, both physically and psychologically. At a point when human civilization becomes a memory in their minds and the world moves on to new forms of existence dominated by raw nature, humanoids and bioengineered animals going rampant. The trilogy offers a prismatic view of the world affected by global warming and climate change through the memories of the characters who have gone through varied experiences.

Memories form a strong and functional narrative device in order to portray the gradual development of climate change and its consequences. For instance, Toby reminisces about her home surrounded by the forest wherein there used to be deer. However, at the time of action, the deer have long gone extinct due to lack of habitat and excess heat. She also remembers her home being taken forcibly by some corporates for development which led to the forest being destroyed contributing to more warming and runaway climate.

Jimmy's memories about his traumatic childhood in the Compounds reveal the horrible feats of biotechnology and bioengineering adopted by the scientists to combat climate change and other concerns. Ren's memories take the readers through the contrasting lives in the Compounds and the Pleeblands and reveal how climate change characterises an inherent social stratification in its impacts. Zeb, who is relatively older among the characters, has memories that go further back in time and reveal the horrid developments in the fossil fuel extraction industry. His memories also dwell deep into the complex web of how spirituality and religion can be an organised power structure. His memories also reveal the impact of spirituality and religion in their allegiance with the corporate industries in manipulating the consciousness of people into subscribing to the notions of anthropocentrism and the normalcy of exploitation of nature. His memories also serve in laying the foundation of the complex

machinations and political plays that keeps on influencing the climate change discourse and his life as a Maddadamite and his post-apocalyptic life depict the probable future of mankind.

In Robinson's *The Warming*, Jon's memory of his science project at school that garnered an abysmal 'C' grade and a disapproving note from the master projects how even the educated people are sceptical of the studies on climate change at that point of time. His project dated April 14, 2013 recounts newspaper reports and scattered studies about the impact of excessive carbon emissions on the stability of the planet and how this might lead to a difficult future. For this the master gives a detailed response which vouches for the current of denialism that existed even among the academicians of the time. The note goes, "Climate change based on human carbon emissions is still conjuncture. Many scientists believe it is as much or more the result of natural planetary cycles as human intervention" (Robinson 3). The school master's statement reveals the sceptical attitude and the grade awarded speaks for the vehemence of the denialism that was in place at the time.

Lorin R. Robinson makes effective use of dreams and visions of the characters to express abstract notions of climate anxiety and stress. Jon's character is presented as being frequently harrowed by dreams about drowning. Many of his dreams are significant as indicating his latent anxiety at the phenomenon of climate change. His recurring dream of drowning in the sea while another diver near him keeps on watching without helping him can be connected to his awareness of the world being consumed by climate catastrophes while humanity watches. This can also be associated with his disappointment about his job and also about his colleagues who, in spite of having knowledge about and equipped with the ability to act on climate change, adopt an attitude of indifference.



Jon's dream of the burning house is highly evocative and is a strong symbol of the possible plight of the increasingly warming world. His own helplessness and guilt at not being able to act effectively towards a better plan to ensure survival can also be seen reflected in his dream.

Jon watched. He was rooted. Frozen. Immobilised. He felt the fire's incredible heat redden his face... Try as he might, he couldn't move. I should do something. Are there people inside? Has anyone called the fire department? Can I find a neighbour's hose? Meanwhile he watched the roof collapse in a shower of sparks and burning beams. Soon the walls followed. The basement became a red, smoking cauldron of debris. (Robinson 125)

Here, the image of a probable apocalyptic event is being hinted at through a dream imbuing into it the prevailing anxiety, helplessness and inability to act. Jon can be seen using this dream of his in his last attempt to make his colleagues sense the erroneous path taken by them.

In the chapter 'Deepest and Darkest' J P has a troubling dream. "...he witnessed a sea of sand submerging everything in its path. He ran but was overtaken and quickly buried" (271). Suman's apocalyptic vision of a lost underwater world is also deep and poignant and serves to instil a sense of urgency for climate action in the reader.

He saw a huge underwater city made of broken buildings, trees, boats and vehicles deposited on the ocean floor by decades of flood waters. The city was inhabited by many thousands of ghosts floating aimlessly in and out of buildings and up and down crooked streets. Among them floated countless

animal apparitions, livestock gathered in herds or flocks: predators – including the last Bengal tiger – moving menacingly among them. (99)

The use of dreams and visions as a narrative device to represent climate anxiety has been observed to be fruitful in the narrative. Such images help in the effective depiction of abstract concepts like anxiety, distress, helplessness and lack of knowledge on warming, climate change and its consequences.

Through the analysis of the usage of memories and dreams in the narratives of Atwood and Robinson respectively, it can be said that these devices also form an effective method in climate change representation. Strategic use of memories can be made to portray the gradual and subtle development of climate change across time. Moreover, it can also depict the emotional vulnerabilities that the characters go through as they face structural imbalances as a result of environmental imbalances. Dreams are an equally powerful tool to depict deep set anxieties and can also serve as metaphors to depict the various aspects of climate change discourse like denial and unequal distribution of consequences.

## **2.6 Metaphor of Food**

Atwood and Lorin R. Robinson make use of food as a metaphoric trope. As Atwood's narration is replete with images of food giving direct suggestions to climate change, future prospects with regard to food and the human mindset with regard to food, the study does a deep analysis into Atwood's use of food as a strong metaphor to denote climate change.

While representing the variously changed worlds in most of her works, it has been seen that Atwood has made a strategic use of food as a metaphor to depict the altered patterns of the world. *Maddaddam Trilogy* presents repetitive and significant

use of food as a symbolic narrative device. The trilogy frequently refers to the politics of climate change with focus on food in various ways. The production and consumption of food occurs as a significant narrative strain in all the three texts. Food has been used as an indicator of the nuances of character and community and also as an evocative tool of memories. The suggestions about the impact of climate change on livestock, agriculture and industries and the mention of deep-sea dredging, acidification of the oceans etc. indirectly suggest the concerns on food evoked by climate change.

Adam Gopnik, essayist and food writer opines that food has distinct uses in fiction. He states that one of the major roles of food in fiction is to show the passage of time and the thought processes of the characters. Both these strains are easily identifiable in the trilogy. Atwood makes structural use of the traditional role of food within fiction and also in specific relation to cli fi. Food can be identified as a structure driving the narrative both in the pre and post-apocalyptic period. Most of Jimmy's memories about the pre apocalyptic time are related to food in terms of belonging and family, individual ethics and identity and most importantly, the loss of natural food items like meat, coffee and natural vegetables. Jimmy, even though belonging to the elite community in the pre apocalyptic period, finds the 'real' coffee and 'real' chicken during his visit to Crake's college a very rare luxury. The juxtaposition between natural and manufactured food provides focus on the impact of climate change on food and acts as the conflict that drives the narrative.

The themes of hunger, survival, food choices, cannibalism and the recurring food symbolism embody the climate change politics of the narrative. In representing the pre apocalyptic period, Atwood uses food as an indicator for the impact of climate change on the whole system on the earth. Real meat, vegetables, milk and other food

items are rarities and agriculture itself seems to have diminished considerably or has vanished. Whatever food that is available is the manufactured versions of chicken, meat, coffee and milk that give a version of the past reality. The Secret Burgers industry that was in vogue during the time, where Toby works, banks upon the ‘secrecy ‘of its recipe for its popularity. However, it is known by most that they use whatever meat is available -- cat, dog or human. In spite of the knowledge, the burger is always in demand. This is a shocking depiction of how climate change and the resultant food shortage can change the ethical priorities of the people. Technological innovations which are adopted as a solution to scarcity of food cloud ethical notions and also lead to issues like unequal access to food and a lack of concern for what can be and cannot be eaten. Moreover, technological solutions overlook the cultural, emotional and symbolic significance of food production and consumption. Jimmy’s memories of childhood, as seen in *Oryx and Crake*, are often based on food or the lack of it and it establishes the images of the declining phase of the family. Belonging to the elite class of the society, Jimmy was never underfed. However, food as a means of gluing the family together never existed. Jimmy remembers Dolores, the live-in house maid who never forgot his birthdays:

...she’d make a cake. Or maybe she’d buy one, but anyway there it would be, a genuine cake, with icing and candles – isn’t that true? He clutches onto the reality of those cakes; he closes his eyes, conjures them up, hovering all in a row, their candles alight, giving off their sweet, comforting scent of vanilla, like Dolores herself. (Atwood 56)

The sense of comfort and security that the memory of Dolores gives him is absent from his memories of his parents. His mother, who is always preoccupied and distracted, habitually forgets about giving him food and whenever she provides him it

would often be a repulsive peanut butter on bread. His father, for his part, is often absent at the dining table. This clearly depicts the lack of wellbeing in Jimmy's family.

The lack of traditional understanding or inability or refusal to prepare or consume food can be seen as either causative or symptomatic of a wider environmental dysfunction. The dysfunctional nature of Jimmy's family is only a representation of the wider dysfunction of the society as a whole, which is brought about mainly by climate change.

In contrast, the *Year of the Flood* presents the gardener community built around food, food knowledge and food choices. The God's Gardeners try to create a world based on self-sufficiency through production and conservation of food from whatever is available in the nature that is left. They believe in a pattern of life where humans live in communion with the flora and fauna. Here too, when God's Gardeners try to recreate a lost world, they are primarily trying to create a food culture that is similar to that of the pre climate altered world.

The God's Gardeners, a survivalist group, aims to survive an apocalypse, the coming of which they are sure of and calls the "Waterless Flood." They form a community based on shared food choices, ethics and taboos, celebrations, festivals and rituals. They are an intentional community as against naturally occurring cultural communities. They have created a way of life and scripture like rules and abide by them to the core. Among other community guidelines, they have a carefully constructed food ethics. They follow food production and preparation guidelines that focus on not depending on consumer food items.

*Oryx and Crake* begins with the chapter “Mango”, significantly titled with the name of a food item. The chapter underlines that Jimmy’s post-apocalyptic life is on equal terms with animals and insects. He is in a position that he should respect the lives of his fellow animals to survive. Reaching his meagre stash of food in the morning requires quite an effort as he has to be careful not to agitate the fauna around him. On reaching the stash, he decides to eat the single mango that is left and decides to save the man-made food items like the Svetlana No Meat Cocktail Sausages and a chocolate flavoured energy bar, thinking “it might be the last one he’ll ever find” (Atwood 4).

Atwood names a number of chapters in the trilogy in terms of food – ‘Mango’, ‘Lunch’, ‘Toast’, ‘Fish’, ‘Sveltana’, ‘So Yummie’, ‘Happicuppa’, ‘Breakfast’ etc. Here comes the obvious suggestion that food or the scarcity of it will be one of the basic issues in a climate altered world both before and after any possible apocalypse. It can be perceived that food, lack of food and hunger drives the narrative forward. Survival is a necessity in both the world, pre and post apocalypse. In the pre apocalypse world, climate change and overpopulation has already diminished or wiped off almost all the resources available now. Food, as it is called, are artificially manufactured products which resemble the ‘real’ food of the past. People survive on energy bars and tablets.

In *Maddaddam* Ren, Amanda and Lotis Blue move on to discussing food in the pre apocalyptic world while trying to comprehend Jimmy’s character.

“‘He used to like spaghetti,’ says Amanda...

‘At high school it was fish fingers,’ speaks Ren.

‘Twenty percent real fish, remember?’ says Lotis Blue ‘Who knows what was really in them.’ They both laugh.

‘They weren’t all that bad, though,’ says Ren.

‘Labmeat goo.’ Says Lotis Blue. ‘But what did we know? Hey. We ate them.’

‘I wouldn’t mind one of those right now,’ says Ren. ‘And a Twinkie.’ She sighs. ‘They were so retro-nouveau revival.’” (Atwood 181-182)

The memories of the lost world in terms of food itself reveals the extent to which manufactured food dominated that world. The reminiscences verging on nostalgia about the food in turn reveals the heavy artificiality that went into the food processing. Everything they ate was ‘labmeat goo’, but still they ate it as real meat was not available. When Ren calls it retro- nouveau revival, she longs for a retrospection that she herself has never experienced.

The focus on food becomes very strong in the post-apocalyptic scenario where the survivors primary concern is to find food for survival. Here, the ‘normal’ life ethical considerations of what or which can be consumed as food is upturned. At one point, Ren forgoes her veggie vows to eat maggots. The Gardeners, who kept a strict ban on eating fellow animals can be seen eating “pig in three forms, bacon, ham and chops” (Atwood 34). In *Maddaddam* Toby thinks, “What to eat, where to shit, how to take shelter, who and what to kill: are these the basics?... Is this what we have come to, or come down to: or else come back to” (120)? The nostalgia for the tastes of the pre apocalyptic time can also be seen as a significant aspect of the structural use of food.

Debra Wain and Penelope Jain Jones argue that food has been used to structure the narrative in Atwood’s works. “It is used as a beginning, something that

drives the narrative and a culminating scenario” (Wain and Jones 4). Food, the availability, preparation and methods of consumption of it are represented to be impacted by climate change and the narrative is driven forward by the characters’ struggles in relation to food. This is a strong strategy that ingrains climate change subtly but strongly into the narrative. The narrative of *Oryx and Crake* begins with a strong food imagery that continues throughout through the concerns like artificial and natural food, lack of food, cravings for food items long lost due to lack of resources, the Maddadamites adopting a new food culture, culture of producing one’s own food, post-apocalyptic fixation on food, cannibalism and uneasy friendships for food security. All these food concerns relate directly to the climate change issue building a strong case for climate awareness. Thus, it can be perceived that Atwood has put forth a replicable narrative strategy through the use of food imagery as a strong catalyst in the depiction of climate change in literature.

Lorin R. Robinson can also be seen to use food, especially the prospect of scarcity of food, to portray a future climate scenario. His narrative focuses on the idea that instead of spending too much resources on infrastructural development to combat climate change, that resources should be diverted to adopt innovative measures of food production as food scarcity is going to be the most horrible consequences of climate change.

## **2.7 Dealing with Apocalypse**

Apocalypse, being considered as the most used but generally undesirable trope to represent climate change, has been seen as one of the drawbacks of representing climate change in literature. Among the authors selected for study here, Margaret Atwood has made use of the apocalypse and its consequential violence and further



efforts for resurgence as significant narrative devices. Barbara Kingsolver too brings in an apocalyptic image in *Flight Behaviour*. This section analyses how the authors attempt to transcend the enlisted demerits of apocalyptic narratives and how the trope has been converted from being destructive to hopeful in the narratives.

While venturing into analysing apocalypse as a narrative device, it is important to note the specific characteristics dealt with in the primary texts, especially in the Trilogy. Margaret Atwood has been vehement in her stance that her works are not essentially apocalyptic or dystopian. The Trilogy cannot be branded as an apocalyptic narrative in technical terms as the destruction caused is not an actual environmental apocalypse as it is deliberately bioengineered by Crake. Moreover, Crake's declared intention in bringing about such a destruction was to annihilate the human race as he considered the greed and solipsism of the humans to be a threat to the survival of nature. Therefore, it can be argued that the real focus is on anthropocentrism, human greed, excessive materialism and human greed. In *In Other Worlds*, she mentions that only the human race is being wiped off in the Trilogy, all other living forms remain on earth and therefore it is not necessarily an apocalypse.(Atwood 93). Therefore, by presenting images akin to apocalypse, Atwood's intention is to signify that there is no future for human centeredness and global capitalism and consumerism in a world altered by climate change. Therefore, it can be said that the apocalypse portrayed in the Trilogy is not an exact eco apocalypse but a deliberately bioengineered one intended to eliminate the human race. This study recognises that the destructive event in the Trilogy is not technically an eco-apocalypse, as it is wrought deliberately and as it destroys only the human race. However, the terms apocalypse, pre apocalypse and post apocalypse will be used here to refer to the cataclysmic event for ease of presentation.

In apocalyptic and post-apocalyptic narratives, the pre apocalyptic world is usually a nostalgic space which is yearned for by the characters. However, in the Trilogy, the pre apocalyptic world is equally despairing and undesirable as the post-apocalyptic world depicted. This aids in promoting the perception that the Trilogy focuses on the global capitalistic and consumerist tendencies and in general the concept of anthropocentrism rather than on the cataclysmic event itself. Crake's intention in bringing about the destruction is only to wipe off the human race and thereby protect the earth from further destruction.

Crake maintains a pessimistic view of human nature and believes that removing humans will wipe off all the misery and destruction from the earth. In *Oryx and Crake*, while charting out his plans to Jimmy he identifies a set of human characteristics that he plans to eliminate while creating the humanoids. He finds the "imperfectly monogamous" (Atwood 195) nature of the human species as the root of terrible misery, jealousy and violence. So he decides to design the "courtship behavior" (196) of the Crakers in such a way that there will not be any more passionate love affairs, longing for a particular loved one, sexual jealousy or the concept of having a single paternal figure. Similarly, he arranges the courtship pattern in such a way that mating is only for procreation, that too limited to once in three years per female. His concern at the excessive exploitation of nature too is reflected in his plan for the post-human world: "You can't couple a minimum access to food with an expanding population indefinitely. *Homo Sapiens* doesn't seem able to cut himself off at the supply end. He's one of the few species that doesn't limit reproduction in the face of dwindling resources" (139).

Similarly, Crake takes care to eliminate the faculty of arts and imaginative thought from the Crakers as he thinks that free thought and imagination are dangerous

as they might lead to more complexities like power struggle, wars, refugee issues and similar issues that exist only in the human world and not among the other species which lack the capacities of thought and imagination. Thus, it can be understood that the bioengineered apocalypse that is depicted in the Trilogy is used as a means to depict the central thought of the banes of human centred global consumerist and capitalist ideals (that has inevitably led to the climate change phenomenon) and not necessarily as a consequence of climate change. This perception redeems the work from the usual drawbacks of apocalyptic narratives as being despairing and leading to anxiety and inaction.

Atwood's usage of the terms "ustopian" and "speculative fiction" for her works can also be seen as significant here. In spite of dealing mostly with a bleak future for the world, Atwood's works can never be called dystopias. Nor can they be called utopias as the projected world is highly possible and equally undesirable. Atwood herself prefers to call her futures "ustopias", bringing together the characteristics of both utopia and dystopia. In *In Other Worlds* it has been stated:

Ustopia is a world I made up by combining utopia and dystopia – the imagined perfect society and its opposite –because, in my view, each contains a latent version of the other...In addition to being, almost always, a mapped location, Ustopia is also a state of mind, as is every place in literature of whatever kind.  
(Atwood 67)

Apart from imagining scenarios that stay in between the distressing and hopeful, Atwood also focuses on giving a firm grounding of logic and scientific precision to her works thus qualifying them for her claim of being "speculative fiction". The future world imagined is plausible and does not include fantasy elements

like dragons or spaceships. The futuristic world presented can be seen as an imaginary extension of the author's perception of the present state of the world thus making her works 'speculative fiction' rather than mere science fiction.

However, it can be seen that Atwood never gives up humankind in any of her futures, however miserable their condition is. She has almost always been positive in her outlook towards the future in her fiction in spite of the overarching dystopian setup. The narrative in *Maddadam* Trilogy begins in a hopeless scene and moves back and forth through the memories of the characters to give the story that leads to the present state. Hope seems to ascend through the three books. The first book is devoid of hope and revels in hurtful images. The second book, though littered with distressing images, seems more hopeful with the rescue of Toby, the organised life of the God's Gardeners and the connection with the environment. In the third book, instances of hope and regeneration seem to rise and the final scene wherein Blackbeard begins to perceive the power of knowledge forms an image of purgation and rejuvenation.

Similarly in *Flight Behavior*, the final flood wipes off the homes and businesses of Dellarobia's village. However, she perceives that the school, which symbolises knowledge and hope for the future, is relatively safer and people are set to seek refuge in the school building. The final image of monarch butterflies, whose imminent extinction was the focal concern throughout the novel, emerging from their sleeping state and seeking new pastures riding on the water swept logs, evokes a decisive image of hope and regeneration after the floods.

Thus, it can be perceived that both Atwood and Kingsolver, though resorting to apocalyptic images, do not give up hope. The characters like Jimmy/Snowman and

Crake in the Trilogy are confronted with winding existential troubles. Kingsolver's people like Dellarobia, Lusa, Nannie Rawlie and Wella are faced with similar questions on religion, social constructs and the demands to stick on to one's roles in family and society. Such ideological conflicts signal that all establishments and socio-cultural practices of ethical and moral constructs, attitude towards the environment and demands upon the socio familial roles of people tend to become redundant and counter active in the long term. Some kind of purgation and rejuvenation is necessary at times for survival. Apocalypse exists in the narratives of Atwood and Kingsolver as a symbol of the ideological purgation necessitated by the transforming environmental and social conditions.

This hopeful turn after the apocalypse thus tends to give the reader a way forward and a revived environmental consciousness rather than the distress, anxiety and hopelessness usually attributed upon apocalyptic narratives. It can be concluded that the primary texts redeem themselves of declared banes of apocalyptic narratives by making a positive thematic turn towards better understanding of the need for a sustainable lifestyle, interspecies respect and a better environmental consciousness. The thought is further elaborated in the section 4.3.5 of Chapter 4.

In order to bring forth the concept of possible ideological transformation and rejuvenation, Atwood has made use of the significance of storytelling both as a narrative device and a tool for ideological transformation. The forthcoming section deals with Atwood's use of words, stories, myths and storytelling as major tropes in depicting formation of environmental consciousness.

## 2.8 Stories, Voices and Sermons as Narrative Devices

Each book of the Trilogy, in the order of publication, involves the use of narrative interruptions in the form of voices, sermons and hymns and stories respectively. In the first book *Oryx and Crake*, the narrative is often interrupted by the voices of Oryx, Crake and Jimmy himself. In *The Year of the Flood* the narrative is punctuated by the sermons and hymns by Adam One. *Maddaddam* features the stories told by Jimmy and Toby to the Crakers and Zeb to Toby. All these interruptions seem to guide the narrative by providing a socio historical context. The interruptions aid in providing glimpses into the past which has set the stage for the present narrative situation. For instance, the voices inside Jimmy's head that signal the deranged state of his mind, reveal themselves to be pointers to the past as the narrative progresses. Oryx's voice interrupting Jimmy's thoughts serve as a narrative of the climate refugee crisis and the subsidiary issues of human trafficking and child pornography.

The sermons and hymns, presented as being narrated by the Maddadamites, provide a perception into the ecological conditions of the pre apocalyptic world and the social attitudes towards it. They also unveil the background of the ecological and social attitudes and ethical benchmarks kept by the characters. Adam One's sermons provide Ren and Toby, both former Maddadamites, ethical directions and also lead them to see their past from an objective point of view. These perceptions indirectly help the reader understand the moral and ethical backgrounds of the climate change discourse of the pre apocalyptic times.

Stories and storytelling occupy a primary space in the narrative of *Maddaddam*. The stories narrated by Jimmy and Toby aid the Crakers form a sense of

self and in creating new theological and mythological backgrounds for themselves. The Crakers's interest in stories make Jimmy and Toby recount the events that led to the apocalypse in the form of stories. This proves to be an effective narrative strategy as it helps in explaining the hard and complex facts of the climate change situation in an easier manner. The other two authors rely on a scientist character to explain such facts and for that situations seem to be forcefully contrived to initiate a conversation. For instance, the lengthy conversation between Dr Ovid Byron and the journalist in *Flight Behavior* and the over the lunch discussions between Jon and Thad in *The Warming*, though aids in effective explanation of the climate situation, appear to be forceful and standing apart from the narrative thread. Atwood's use of voices, sermons and stories appear to be a superior strategy as it syncs seamlessly with the narrative and also helps in conveying the deep philosophical and existential questions related to the climate crisis. Stories and storytelling hold greater significance in the Trilogy than being mere narrative techniques. So, deeper analysis of this aspect will be done in chapter 4 in the section, "Regeneration through Storytelling " (4.3.3).

## **2.9 Dealing with Genre**

The occurrence of speculations about climate fiction's inability to conform itself in a particular genre calls for a genre wise analysis of the primary texts. As for the *Trilogy*, the author herself has voiced her insistence on categorising her works as speculative fiction rather than under the sweeping genres of science fiction or dystopian fiction. Lorin R. Robinson too groups his work under speculative fiction and uses the term in the title.

Speculative fiction, unlike popular science fiction, does not take flight of fancy that does not correspond with the existing scientific knowledge. The mode also

tries not to misinterpret or bend the notions of science to create fantastical scenes like alien invasion, time travel and the like. Instead, the genre projects on the current scientific knowledge to foresee possible futures thereby helping the readers to get a logical vision into the future of the world. These characteristics can be identified in both the *Trilogy* and *The Warming* thus vouching for labelling them under the genre of speculative fiction.

Kingsolver's works do not carry the burden of being relegated as mere science fiction as all of them possess relatable humanistic strains. Most of Kingsolver's narrative occurs through the thoughts and conversations of the characters and dwell upon the humanistic aspects of climate change. The elements of *bildungsroman* is a common strain in all the selected works as the narrative progresses through the emotional and ideological maturing of the protagonists making them more environmentally responsible citizens. The elements of pastoral can also be identified as all the texts focus upon the primacy of the natural background so that the sense of environmental concern pervades the narrative. Apocalypse is used as a trope in *Flight Behaviour* to show the slow precipitation of events to a climax of destruction, facilitating a fresh and more aware start for the survivors. The occasion of Hester and Dellarobia roaming the mountains in search of some medicinal plants offer elements of the pastoral and is highly evocative of the sense of loss and then a subsequent hope of regeneration. *Unsheltered* also uses *bildungsroman* to portray Willa's journey from negligence to awareness. Strong elements of the pastoral can also be perceived in the long descriptive passages in the 19<sup>th</sup> century timeline.

Thus, it can be concluded that all the primary texts succeed in overcoming the issue of being devoid of generic characteristics or being ineffectual.



## 2.10 Dealing with Scale

Timothy Clark in the chapter “Imaging and Imagining the Whole Earth: The Terrestrial as Norm” of *Ecocriticism on the Edge: The Anthropocene as a Threshold Concept* states that ‘one scale forms a kind of norm for us, the usually taken-for-granted scale of our day-to-day existence and perception’ (30). The significance of climate change fiction is that it can make the readers apprehend the multiplicity of perception thus defamiliarizing and destabilising the existing norm. The primary texts attempt to deal with the massiveness of the spatial- temporal scales of climate change through the thoughts and experiences of several characters and also through the explanation of the state of things using the knowledgeable characters as medium. The use of characters and plotlines from separate timelines also serve the purpose of revealing the presence and development of climate change across centuries. For instance, the use of the 19th century and 21st century timelines in *Unsheltered* brings to focus various aspects of the development of the climate change phenomenon such as the immediate and later effects of industrialisation, differences in the attitude of people towards the environment and influence of religion and politics upon the perception of people. The Trilogy with the aid of its massive space across three books succeeds to portray the causative features of climate change, especially the aspects of anthropocentrism and excessive dependence on technology. *The Warming* undertakes the issue of time and space through the use of devices like memories and explanatory narrations. As all these aspects have been discussed in detail in several sections across the chapters, further analysis of the same will not be attempted here.

## 2.11 Conclusion

The chapter enlisted the various representational challenges faced by the authors of climate change literature and has studied the various ways in which the selected authors have attempted to scale these challenges. From this analysis it has been made clear that climate change is not entirely unrepresentable and tactical use of various narrative methods and devices can help in the representation to a large extent. Climate change being a hyper object in Timothy Morton's terms, defies all known measurements, thus defying fictional representation too. However, fiction finds itself in uncertain waters only when it tries to accommodate all the various and complex facets into it. Instead, the author can concentrate on one or more crucial factors like future prospects, food scarcity and hunger, species extinction, unequal distribution of consequences, denial or anxiety rather than going for the whole.

Thus, by focusing on particular aspects the author can overcome the problems of genre and scales too to a large extent. Regarding the question of the necessity to adopt apocalyptic scenes and to extrapolate into the future, Atwood's method of adding symbols of hope, rejuvenation and the prospect of sustainable survival are replicable. The problem of being considered trivial and fantastical while extrapolating into the future can be countered by the use of speculative fiction mode that places the imagined future on the strong and credible footing of the existing knowledge and developments in the fields of science, technology and socio-cultural institutions.

Barbara Kingsolver's texts vouch for the fact that climate change can be depicted even without resorting to future timelines or apocalyptic scenes. Even though *Flight Behavior*, her seminal text on climate change, features a final scene of

destruction, it is juxtaposed with the vision of survival, rejuvenation and a new, more sustainable and aware way of life. Kingsolver's method of plot construction, casting of characters and designing of contexts can be simulated by authors who aspire to do a subtle yet strong portrayal of climate change.

Lorin R. Robinson can be studied for adoption of innovative narrative strategies in the representation of climate change. It can also be said that the possible flaws in adopting new techniques can also be understood by studying Robinson's fiction. Therefore, the narrative strategies adopted by the authors here can be presented as signposts for aspiring authors to follow.

As seen in the chapter, the representational difficulties in climate change literature arise mostly from the complex socio-cultural background of the phenomenon. Therefore, it becomes imperative that the socio-cultural canvas of climate change should be analysed for a fuller comprehension of the subject and also for further deliberations upon the pragmatic solution to the representational and existential challenges posed by the phenomenon. The next chapter discusses the representation of socio-cultural dimensions of climate change as perceived in the primary texts.

## Chapter 3

### Socio-Cultural Dimensions of Climate Change

#### 3.1 Introduction

The discourse of climate change originated in the objective world of science. However, even when the knowledge and awareness of climate change took initiation in the scientific world of precision and finality, the actual impact of the phenomenon occurs in the imprecise, ever evolving and subjective world of human, animal and plant lives. Climate change, when being transported from the realms of measurements, statistics, observations, experiments and objective studies of science to the complex, biased, multidimensional, subjective realms of human lives, becomes inevitably problematic.

The term climate, according to the World Meteorological Organization, describes the average weather conditions for a particular location over a long period of time. This clinical and objective definition serves in the conceptual and ideological disconnection of the phenomenon from the lived social and cultural realities of human beings. Yet, climate has always been present in the history of human cultures and societies. All aesthetic, political and scientific engagements and representations have been infused with the influences of climate. For instance, time and methods of agricultural practices have everywhere been decided by the weather thus making weather and climate change decisive agencies in the cultural fabric of communities. However, though a pivotal shaper of socio-cultural realities, climate had, for long, been dormant to human comprehension due to its relative stability and the farfetched nature of its change.

However, as climate started to manifest itself with perceptible changes, the necessity to rethink climate, especially climate change, from the point of view of humanities as an essential complement to scientific research has arisen. In “Cultures of Climate: On Bodies and Atmospheres in Modern Fiction”, Nitzke and Horn state that climate change is a force that connects “bodies, cultures and social institutions” (1). In literature, the tendency to set nature and climate as mere background prevents literary research from considering the enmeshments of nature and culture. With the advent of concern on climate change, things that used to be mere settings in literature such as landscape, ways of life, weather conditions, agricultural practices, rituals and architecture, have been pushed to the forefront as climate change attains thematic significance. This has also paved way for new concerns like varied responses to information on climate change, influence of social, cultural, political and religious institutions on the perception and responses to on climate change, climate anxiety and other psychological issues related to climate change, climate apartheid and refugee scenario, complexities of risk perception and many related issues being incorporated into literature.

Nitzke and Horn opine that “climate change, as well as climate as such, is neither merely cultural nor merely natural but a contact zone where human and non-human forms of life, natural environments, economies and technology are inextricably intertwined” (2). Analysing the imaginative depictions connected to climate change in order to study this intertwining and the socio-cultural responses to climate change will aid in invigorating the research and critical studies on climate change literature. The objective of the chapter is to analyse the representation and the influence of the socio-cultural environments on human perception and reaction to climate change in the

primary texts. It also tries to scrutinise how climate change affects and influences the socio-cultural scene.

The chapter proceeds through sub sections each analysing a distinct socio-cultural aspect of climate change discussing how the primary texts have approached the subject from a cultural studies perspective integrating the social, political, ethical and religious dimensions of the climate change discourse into the narrative.

### **3.2 The Politics of Climate Change**

The politicised nature of the climate change discourse has been discussed in detail in the previous chapter. The profound political nature and money-based machinations surrounding the climate change discourse has been one of the most complex and difficult aspects to be dealt with by the authors of climate change literature. This section delineates how the primary texts deal with this politicised and materialistic background of climate change and also tries to answer the issue of difficulty of representation due to it.

The politics of climate change forms the background of Atwood's narratives. The Trilogy dwells in the deep-set plays and ploys of the administration, religious institutions and the corporate sector in catalysing climate change and in manipulating its consequences. The first two novels depict incidents that happen parallelly and the final novel forms a point of convergence and continuance for the first two. The primary setting is presumably the United States of America and references to incidents happening in other parts of the world punctuate the narration. The narrative is futuristic and represents a world that has been ravaged by climate change, technocentrism and corporate horror. Organised administrative system seems to have dwindled and the control of the society is taken up by the corporate sector. The

corporate administrative system is aided by a ruthless private army called Corps se Corps, short for Corporate Security Corps.

The gated “Compounds” wherein the elite section of the society that includes the scientists, bioengineers, doctors and people in related professions live and work is guarded over by the Corps Se Corps. The Compounds form separated insulated worlds where the inhabitants can live ‘securely’ without venturing out to the ‘dangerous’ pleeblands. To get out of the gates of the ‘Compounds’ itself requires a lot of paperwork and permissions. The place gives the atmosphere of a prison under heavy surveillance where the superior brains of the world toiled to alter the foundations of the world in every way possible to technology. This is done under a façade of luxury and security that the people themselves fail to understand that they are brain slaves.

The rare ones who actually see through the situation are branded insane, imprisoned or mostly made to die in freak ‘accidents’. Jimmy’s mother and Crake’s father are significant examples of such ‘freak’ and ‘strange’ people. The children who grow up in the Compounds are equally damaged. Living up to the brain standards of the parents itself was a challenge. In addition to this, the children are born into dysfunctional families which face various sorts of pressures faced by the parents. In *Oryx and Crake*, Jimmy thinks about his own past self, “At least he wasn’t a drunk or an addict like a lot of boys his age...” (Atwood 66). All the children are exposed to barbaric online games, assisted suicide sites, kill games where people are paid to be killed, child pornography and several such stuff. The lack of parental concern about the virtual and real life situations that the children are exposed to signals the dangerous and undesirable world brought about by climate change and related organisational anarchy.

As technology is being considered as a means through which the onslaught of climate related catastrophes can be fended off, Atwood unveils the collateral damage that can ensue in the process. As the adult population immerses themselves in more insane innovations to keep the race alive, the children are steeped in activities that leave them devoid of emotions, ethical concerns and morality.

The pleeblands, which form the other half of the world, devoid of the luxury or financial security of the Compounds, are presented as the breeding ground of equally malignant socio-cultural anarchy. Here, the people are constantly exposed to harmful ultraviolet rays and radioactive material, all consequences of the climate change phenomenon. The pleebs are infested with all sorts of crimes, prostitution and violence that can only be seen as survival tactics in a severely unfriendly climatic situation. Lack of fresh water and other resources is common for the pleeblanders whereas the Compounds always have a cache of resources, all plundered from the pleeblands. The lack of resources leads to people resorting to violence and abuse for survival, which in turn becomes a staple mode of behaviour.

Remarkably, the post-apocalyptic world, as it is portrayed to revive from the apocalypse, is based on mutual help and inter-species cooperation. The history of the world rendered to the Craker children by Jimmy/ Snowman and Toby is curiously devoid of references to money. As the Crakers are born into a world where all need for the human made medium of money is no longer significant, they are bound to be confused at its mention, just as they are confused by the swear words used by Jimmy which have no contextual significance.

The Trilogy has also probed deep into the clandestine part of the medical and pharmaceutical business that use the unsuspecting pleeblanders as test subjects and



also to secretly administer shady drugs to garner wealth. Toby's parents and Crake's father are presented as prey to such a medical lobby. It can be noted that when Crake creates the Crakers he designs them with an inbuilt healing system called 'purring' which makes the medical business unnecessary in the post-apocalyptic world. The stress upon the centrality of any particular species is also avoided in the post-apocalyptic scene, thus deconstructing the notion of anthropocentrism. As the notion of anthropocentrism is discussed in Chapter 4, the issue will not be further delineated here.

Analysing the socio-political structure imagined for the future in the Trilogy brings in the comprehension that the climate altered future can lead to a shocking system wherein the political and administrative institutions are controlled by the economically empowered. The social, cultural and ethical anarchy that might rule a future world with an unfriendly environment and lack of resources also find depiction here. As the pre apocalyptic world depicts the utter chaos and anarchy that can be brought about by ruthlessly political and commercial concerns, the post-apocalyptic world is presented to be surviving on primal instincts, mutual respect and interspecies cooperation. Thus, Atwood succeeds in presenting the various aspects of political and economic interference on the socio-cultural fabric in a climate altered world.

Lorin R Robinson in *The Warming*, approaches the political and finance-based play controlling the climate change discourse from a different angle. While addressing the aftermath of human induced climate change on the future world, Robinson focuses significantly on the multifarious ways in which vested interests of businessmen, corporates, politicians, diplomats and other stakeholders interfere in the execution of full-fledged climate action. The action plan on confronting climate change seems obvious and direct as discourses involving reduced exploitation of fossil fuels,

switching to alternate energy resources, reducing consumerism, equity in climate justice and biggest emitters of greenhouse gasses funding the affected and vulnerable are always in circulation. However, each of these solutions entail a plethora of complex and convoluted backstories of political, diplomatic, economic, social and cultural relations. A number of such images and references can be found scattered in the novel emphasising the role of corporate and political power play behind backlashing of climate action and the entire machinery of climate change denial.

In the chapter “Hall of Shame”, located in the year 2029, Whitaker reports about an award instituted by Greenpeace which is called the Annual Foch Brothers Environmental Hall of Shame Award. The controversial award is named after the Foch brothers who were billionaire poster boys for climate change denial who spend their dollars to attack all studies revealing anthropogenic climate change and to block all key legislations to reduce emissions. They made their fortunes in the oil business and “amassed more pollution related fines than any other U S refiner” (Robinson 107). Therefore, they naturally were in the forefront to discredit alternative energy sources.

In the present narrative, the award in their name is given to a person commonly voted for as the “worst of the worst in anti-environmentalism” (107). The person selected for this controversial award for the year is the former Head of the US Environmental Protection Agency for accepting a \$250,000 from a lobbyist allied to the coal industry’s trade association in return to blocking the passage of legislation being introduced to endorse tougher standards for carbon emissions by the nation’s coal fired power plants.

Several such instances revealing rampant corruption in the establishment have been mentioned in the work. The corruptive practices like reallocation and misallocation of funds meant towards protection of environment, deliberate lapsing on mitigation targets and passing of unscientific and anti-environmental legislations that occur in almost all administrative systems are effectively portrayed. The massive administrative protest that arose on the publication of Jon's article studying the ineffectiveness of sea walls also reveal the complex bureaucratic and corporate machinations behind it. Acceptance of Jon's ideas would break the misguided notion among the population that by building seawalls, the governments are doing something to combat climate change. This kind of a false sense of security would keep public perception away from damaging activities like the fracturing gas and oil-bearing shale beds with horizontal drilling, leakage of poisonous gasses in industrial areas, expulsion of untreated grey water from ships and industries into oceans, expulsion of carbonated exhaust out of industrial plants etc.

In the chapter "Tectonics" Thad says, "Despite clear evidence for decades that fracturing gas and oil-bearing sea beds with horizontal drilling – using water and exotic chemicals under high pressure- was causing enormous environmental, health and geologic damage, big oil and its political stooges blocked any meaningful regulation" (51). Moreover, the discussion between Thad and Jon reveals how the oil industry in the United States have been selling myths for some decades that the oil shale reserves of the country were good for a hundred more years. This, Thad explains, is a huge lie as the shales are already going dry and the repetitive fractures have caused the tectonic plates to slip positions which will lead to disastrous earthquakes.

Apart from misdirecting the people about the longevity of the shales, much of the output is being shipped overseas to countries paying many times more than the current US market rate. For this, the politicians remain collaborators as the heavy paychecks keep coming from the “paymasters.” (52)

The chapter ‘Francesca and Paulo’ mentions how a pragmatic project on renovating the buildings in Venice to help them withstand the rising waters was upheld for long and then given up due to lack of funds. “...charges of gross corruption, poor engineering and adverse environmental impact held the project up in court for years. As the economy continued to worsen the project eventually sank from sight” (141).

Naomi Klein states that “there is a direct and compelling relationship between the dominance of the values that are intimately tied to triumphant capitalism and the presence of anti-environment views and behaviours” (Klein 60). The analysis of the primary texts confirms this observation. It can be seen that the primary texts, especially the Trilogy and *The Warming*, give strong portrayals of how huge money from the corporate sector and the fossil fuel industries circulate in the socio-political-administrative sectors intervene in productive actions and block new legislations that help combat climate change. Further evaluation of the money related causes and consequences of climate change is done in the section ‘Unequal Distribution of Consequences’ (3.4).

### **3.3 Faith and Climate Change**

Religion has always been a strong institution wielding great power in influencing the outlooks and actions of people. The use of the term religion in this study does not intend any particular religion and the attempt is to portray how religion

and the subsequent faith in a superior entity that it imbues in people play a huge role in ideological formation. The section studies how the primary texts portray religious institutions and faith as powerful interlocutors that influence attitudes towards climate change.

The influence of religious institutions upon people's comprehension of climate change is a subtle and an often-overlooked aspect of the climate change discourse. As the existence of climate change is an issue that is highly disputed in the socio-political spheres, it is inevitable that religion, an enormously powerful but refined medium, is brought into the field by any or all of the rivalling factions. Religious and spiritual orientations of the people exert great influence upon their perceptions and responses to all issues. The spiritual dimensions adopted by each person are deeply imbued in the cultural, ethical and moral deliberations. Therefore, it tends to have overt and covert impacts upon the attitude of people towards the climate change discourse.

Atwood and Kingsolver are seen to take strong stances upon the influence of religion or scriptures upon the mindscape of the people with regard to climate change. As Atwood focuses upon the vile nature of devious prophets who misuse their stature as powerful influencers compelling people to forego ethical concerns in overexploiting nature, Kingsolver looks upon the subtle impact of the scriptures upon people and their choices. Atwood focuses upon the areas of fossil fuel extraction and exploitation of natural resources. Kingsolver tries to reveal how people misinterpret scriptures to validate their actions. Both authors agree upon the role of scriptures in giving man the sense of being the centre of the universe and also about the power of faith and religion in eliminating that anthropocentrism.

### 3.3.1 Faith as a Manipulative/ Ideological Tool

The Trilogy has various references to the interference and influence of religious ideologies in the environmental and ethical choices of human beings. The issue is directly addressed in the third instalment, *Maddaddam*, which describes the harrowing childhood of Zeb and Adam One under the tutelage of their unscrupulous father, a religious preacher called ‘The Rev’. The Rev according to Zeb, “... tarted up his misdemeanours and made them look respectable...” (Atwood 136). He led one of the several religious cults, which was “...the way to go in those days if you wanted to coin the megabucks...” (136). Religion is presented as a way through which a crooked person who is skilled in persuasion can manipulate the ideologies and attitudes of people to create ethical paradigms that complement the commercial ideologies of the influential sections.

The Rev has a megachurch, the Church of PetrOleum, which came up when accessible oils became scarce, shooting oil prices up and sending people into desperation. As desperation is always the fuel for religion, the Church of PetrOleum also garners followers. Top corporate people would turn up as guest speakers at the Church and “They would thank the Almighty for blessing the world with fumes and toxins, cast their eyes upwards as if gasoline came from heaven, look pious as hell” (137). To give credibility to his preachings, the Rev even manages to find scriptural foundation for it – Matthew, Chapter 16, Verse 18: “Thou art Peter, and upon this rock I will build my church.” He cooks up a ridiculous interpretation to the verse that as *Peter* is the Latin term for rock, the verse actually refers to petroleum or the oil that comes from rock. At the pew he says, “So this verse... is a prophecy, a vision of the Age Of Oil, and the proof, dear friends, is right before your eyes, because look! What is more valued by us today than oil?” (138).

Interestingly, Adam One and Zeb, on escaping from the clutches of the Rev, decide to follow his path in forming a religious cult with elaborate rituals and ceremonies in order to spread their own environmental ideology. The God's Gardeners form an environmental cult, deemed to be a terrorist group by the Corps, who recruit followers and have strict ritualistic and lifestyle rules, similar to the religious institutions. The lifestyle, food habits, ceremonies and attitude towards non-human world endorsed by the God Gardeners anchor upon destroying the notion of the centrality of the human being and subscribe to the belief that humans form only one of the several of God's species. The scriptural material and the history of the God's Gardener cult as created by Adam One works towards cementing the ideology of biocentrism onto the psyche of the followers.

Similarly, in the post-apocalyptic world, as Toby and Jimmy construct a mythology for the Crakers to anchor upon, they make sure to give it a central, unseen power, whom they call Crake, thus giving a religious tone to the story. The slave-like allegiance shown by the Crakers to the unseen figure of Crake represents the tendency to cling on to the belief in an unseen protector who takes care of everything. Thus, Atwood skillfully portrays how religion can be used as an ideological tool and manipulative machinery to effect action, either towards destruction or protection of the environment.

### **3.3.2 Faith as a Tool of Climate Change Denial**

Kingsolver depicts religion and the scriptures as curtains behind which people tend to hide their guilt and anxiety in relation to climate change. The scriptures and the ways in which man interprets them for his convenience occur as a central trope in all three of Kingsolver's novels. Kingsolver tries to lay down the thought that human

beings use the scriptures to exploit nature and then also to validate the actions and later to turn a blind eye on the consequences.

In *Prodigal Summer* the Garnett Walker- Nannie Rawlie plotline dwells upon how the scriptures are interpreted in such a way as to suit the selfish interests of the human species. Garnett Walker, a lonely old man weakened by age and the loss of his family, represents the typical self-centred human species, whose religion and moral ideology makes him blindly believe in the superiority of his race and its corresponding privilege to exploit and misuse nature. Garnett considers it completely normal to use poisonous pesticides in his farm to kill bugs and is absolutely nonplussed when questioned by Nannie Rawley, his “eccentric” neighbour about the millions of harmless bugs and insects that would be killed in the process. He holds on to his simple and constant belief that “success without chemicals was impossible” (Kingsolver 89).

Garnett, like most other inhabitants of Zebulon County, believes Nannie Rawley to be deranged due to her obsession with organic farming and hatred for pesticides. Garnett’s ruminations on how his ancestors built an empire logging the chestnut trees that thrived in the forest and how all on a sudden, the empire had a sudden fall in 1904 when all the chestnuts were destroyed by the chestnut blight brings to light the history human intrusion onto ecosystem of the land. Garnett has a scriptural reasoning even for the tragic fall of his own family fortunes. He resigns himself to fate with the thought “The Lord giveth and the Lord taketh away” (131). The language of Garnett’s ruminations throw light into the ironic normalcy with which human beings view the exploitation of nature.



Of chestnut logs the Walkers had built their cabins, until they had sons and a sawmill to rip and plane the trees into broad lumber from which they then built their houses and barns and finally an empire.... Starting with nothing but their wits and strong hands, the Walkers had lived well under the sheltering arms of the American chestnut until the slow devastation began to unfold in 1904, the year that brought down the chestnut blight. (131)

Garnett represents the weak excuses man holds in justifying his exploitation of nature and Nannie Rawley deconstructs the whole scriptural interpretation given by Garnett through her pointed questions. Garnett and Rawley stand on either side of the scripture interpreting it in entirely different, if not contrary ways.

Garnett who dares not to question God's plans in destroying his family fortune through a debilitating chestnut blight, dreams of restoring the American chestnut, which he considers his family's legacy, on the earth. He never bothers to think about the reasons that might have brought about the blight or that gave his beloved wife cancer that took her life.

The chestnut blight is a fungal infection that caused all the American chestnuts to decline over the period from 1904 to 1940. The infection was caused by the fungus *Cryphonectria parasitica* which was brought to the United States from Japanese nursery stock in the 1900's. ("History of the American Chestnut Foundation"). Even though the introduction of the fungus is not mentioned in the novel, the untold backstory is always present. The disastrous intervention of humans on the natural ecosystem definitely brought about the extinction of the American chestnut. American chestnuts, unlike the Asian variety, were not immune to the fungi which naturally occurred only in South East Asia. Accidental introduction of the fungi to American

and Europe led eventually to one of the most massive loss of forests world has ever seen.

Garnett painstakingly collects a handful of seed sources for American chestnuts and manages access to a number of Chinese chestnuts, considered to be a variety inferior to the American chestnut. He dreams about breeding the seed source with the Chinese chestnuts thus recreating the lost American giant minus its vulnerability to the blight. Of the Chinese chestnut he thinks “This lesser tree had been spared for a divine purpose, like some of the inferior animals on Noah’s ark” (131).

In *Flight Behavior* Dellarobia Turnbow acts as the sceptic whereas the rest of the community, for whom Hester acts as the mouthpiece, gives up the drought, rain and snowstorm that hits them as the will of God. The Feathertown population is depicted as a closely knit community mainly of farmers and ranchers. The church is crucial in their lives wielding the power to interfere, interpret and decide. Everything that happens in their lives is seen as ‘divine blessing’ if the outcome is good and ‘God’s will’ if otherwise. When the incessant rain that has been falling for the past few days ceased on the day before the sheep shearing, Hester says, “Know that the Lord God is mighty” (Kingsolver 21). But, when asked about the rain ruining the neighbour’s crops, Hester becomes defensive saying that God’s plans are mysterious. People can be seen rubbing off their insecurities about the uncertain weather by speaking about the ways of the Lord at several points in the narrative. In all these instances, religion comes up as a powerful excuse not to confront an undesirable reality. The most readily adopted explanation for climate change is also a religious one – that weather is “the Lord’s business” (261).

The 1871 timeline of *Unsheltered* unravels the excessive and blind belief and hanging upon the Scriptures. Any kind of scientific activity is scorned upon and rejected by the community and anthropocentrism seems to be the norm. Funny but evocative scenes of how the school curriculum itself is completely taken over by teachings of the scriptures that are also convoluted by notions of patriarchy and anthropocentrism.

All three of Kingsolver's novels depict the view that hanging upon the scriptures to validate anthropocentrism and using the scriptures and the name of God to deny or ignore climate change is a common escapist mechanism for human beings. Thus, religion itself is seen as a mode of climate change denial. In all three novels Kingsolver makes sure that reason prevails and climate change as a fact imprints upon the consciousness of the characters. It can be said that Kingsolver uses the thread of spirituality to bring in most of the human community under the radar. Making use of a matter that is intangible but very real to most people, a similarly intangible but real climate change can also be represented.

Therefore, on a deep analysis of the narratives of Atwood and Kingsolver, it can be perceived that both authors consider religion as a decisive force that can affect the public attitude towards the climate change discourse thus enforcing the deep set cultural background of the discourse.

### **3.4 Unequal Distribution of Consequences**

The most unfair and distressing fact about climate change is that its consequences are most unequally distributed. This concern has been presented repeatedly in all the United Nations Climate Change conferences and several other

platforms addressing the climate change issue. This is also one of the most important hurdles to the cooperative action by countries to combat climate change.

Climate change will have devastating consequences for people in poverty.

Even under the best-case scenario, hundreds of millions will face food insecurity, forced migration, disease and death. Climate change threatens the future of human rights and risks undoing the last 50 years of progress in development, global health and poverty reduction. (Alston)

In the same article, Philip Alston, UN Special Rapporteur on Extreme Poverty and Human Rights, speaks about the situation of a ‘climate apartheid’ looming over the world. Underscoring that the people who are already in and near poverty are the most vulnerable to the consequences of the climate change crisis, he asserts,

...it (climate change) could push more than 120 million more people into poverty by 2030 and will have the most severe impact in poor countries, regions, and the places poor people live and work...Perversely, while people in poverty are responsible for just a fraction of global emissions, they will bear the brunt of climate change, and have the least capacity to protect themselves... We risk a ‘climate apartheid’ scenario where the wealthy pay to escape overheating, hunger and conflict while the rest of the world is left to suffer.

The *Maddaddam* Trilogy directly addresses this crucial angle of climate change by dividing the imagined future world into two sections—the Compounds and the Pleeblands. The compounds are heavily insulated areas where the rich and highly advantaged sections of the society --- scientists, doctors and investors live. Even here, it is actually the rich investors who matter as the scientists and doctors exist just for

making the life of the rich longer and comfortable. The 'pleeblands' represent the rest of the world, living in highly insecure and vulnerable conditions on a very unfriendly earth. Here, the privileged are shown to have achieved the power to combat climate change while the vulnerable, who form the majority of the population, are shown to be taking all the consequences.

The inhabitants of the Compounds keep themselves safe from the vagaries of the uncertain climate with the aid of ultra-sophisticated technology. Each compound is a world in itself which is technologically managed to have comfortable temperatures, sufficient food and water and even methods to keep the residents youthful. The pleeblanders are the economically vulnerable, who confront the consequences. Their lives represent normal future prospects for the world which is exposed to radioactive elements, droughts, lack of resources, food and water. The pleeblands are subject to frequent pandemics and other consequences of a climate altered world. Thus, through the depiction of the future as being divided into economically determined sections, Atwood strongly brings in the concept of unequal distribution of the consequences of climate change. As Atwood's approach towards the issue is already dealt with in the section 3.2, further analysis will not be attempted here.

Kingsolver too addresses this frequently pronounced but little understood issue. The unequal responsibility of anthropogenic climate change and the unfair distribution of its consequences are dealt with by Kingsolver mainly in *Unsheltered*. The character of Tig speaks up about the plunder of the planet that is being done by a very small percentage of the population which consists of the elite. However, the consequences of the plunder are to be faced first by the people who had nothing to do

with the cause. The free market and the increased buying capacity of the people seem good at first glance. However, when Tig speaks it becomes demonic:

One percent of the brotherhood has their hands on most of the bread. They own the country. Their god is the free market, and most people are so horrified they won't even question the system. If it makes a profit, that's the definition of good. If it grows you have to stand back and let it. The free market has exactly the same morality as a cancer cell. (Kingsolver 412)

Similarly, the farmers forced to give up corn and sugarcane and resort to tobacco farming in *Prodigal Summer* and Bear attempting to log his patch of forest in *Flight Behavior* are instances where unsuspecting people fall prey to the ravages of climate change. A strong example occurs in *Flight Behavior* when Josephina's family is displaced from their land in Mexico when a severe landslide wipes their home and neighbourhood. The landslide took place as a result of incessant rain causing the heavily logged mountainside to crumble. Here, neither Josephina's family nor her neighbours did anything to cause the disaster. The mountainside was logged by some corporate giants but the villagers face the brunt. Thus, it can be detected that even when the issue of unequal distribution of the consequences of climate change is not directly mentioned in the texts, the author has deliberately embedded the theme onto the fabric of the narratives.

In his work, Robinson has taken great effort to depict a futuristic world wherein the climate altered system of life holds no place for the poor and middle class. He presents a number of situations wherein the ultra-rich people can afford alternative lives which the common man cannot even perceive of.

For instance, in the chapter ‘Catching Up’ set in 2047, Jon comes across information about “commercial underground shelters” commissioned by the rich people of the community to escape in case of a climate change event, which they continue to deny. Jon reads about a “two-million-plus-square foot underground complex near Atchison, Kansas, developed by a consortium of billionaires” (Robinson 78). The facility was actually built by the military in 1944 and is located about 130 feet below ground. In 2013, it was decommissioned and sold at a blinding rate for being converted into “Survival Shelter and Resort” by a Californian Company that specialized in underground shelter design and construction. The company renamed it “the world’s largest doomsday shelter” and rebuilt it with facilities like indoor golf, bowling alley, gym, swimming pool, hair salon and spa and a two-acre dog and cat park – “all the amenities of a four-star hotel.” The facility was also equipped with all the innovations that would help it “withstand any predictable disaster or catastrophic event, including nuclear fallout, biological agents, gas and viral pandemic, as well as manmade disasters from an economic meltdown to total anarchy.” (78). The company founder promised the potential customers that “When apocalypse comes...people can be prepared to sit out a possible life extinguishing event in style. This would be the be all, end all shelter.” (78). The luxury shelter, after remaining unsold for some years, was quietly bought by the billionaires who customise it for more luxury. Jon observes, “For the super-rich it was insurance, not against the apocalypse, but against the potential collapse of the country’s infrastructure and conflict over resources that might result from the warming” (79).

He also learns about a number of other such shelters, exclusively for the billionaires, which have been built in several other parts of the world. These shelters, being located above ground, are protected by the private military. Robinson’s

speculations about the future world wherein the rich get ready for the inevitable catastrophe by building insulated shelters reflect Atwood's conception of the "Compounds" where the rich reside under heavy protection from climate events and the outside world called "Pleeblands", occupied by the poor, are exposed to the elements, to violence and to diseases.

The chapter 'Exodus' in *The Warming* depicts the mass migration of the inhabitants of an island in Polynesia due to rising sea levels and the resultant lack of water and arable lands. The necessity of abandoning one's land of birth and subsistence is an undesirable predicament. The unfortunate fact is that the people who have less or no part in the environmental degradation often become the first victims. Lisa Markus, the representative of the NGO Global Relocation Services, says in the novel "What a tragedy that the people who contributed least to the warming are the ones who bear its greatest burdens" (Robinson 61).

In a similar vein, the chapter 'The Perfect Storm' depicts a cyclone in the coastlines of Bangladesh in the year 2029 which spreads massive destruction. As the story unfolds, the reader witnesses the protagonist's family losing their land and livelihood to the storm in a matter of a few hours. Sumon and his family are uneducated farmers who lead a hand to mouth existence. They are unfamiliar with the discourses of climate change and global warming and the only knowledge they have is what Suman has gleaned by listening to their radio, their only connection to the outer world. The weather forecast about a cyclone which Sumon gathers from the radio gives him a gut feeling to evacuate his family which proves fortunate. As Sumon manoeuvres a risky escape on a boat, he laments, "Lord, are we not already among the poorest, most humble, most downtrodden people. Are our sins so iniquitous as to cause you to destroy us in this way? To wash men, women and



children off the face of the earth? To banish whole generations of your people to watery graves? Why Lord? Why” (105)?

Stressing upon yet another and entirely different manifestation of economic inequality in a climate altered world, Robinson depicts a 2043 story wherein Kent Whitaker reports from an “undisclosed but beautiful” (301) location. Whitaker reports about a community of people who lead a minimalist life of great quality away from the humdrum and sweltering heat of the modern day. They group leads an idealistic life producing food of their own and depending upon solar and wind energy for all their needs. They adhere to strict policies limiting the number of inhabitants as they do not want to endanger the environment and to limit cultivable land. For this reason, the residents were required to meet ‘strict admission standards’ (303), the first of them being “the amount of money they could put into the communal pot” (303). Thus, it becomes clear that opting to live such a utopian life of bucolic simplicity also becomes the privilege of the rich.

The blame for this situation can also not be put upon the founders of this lifestyle as they are also people who were rendered jobless with bleak futures “as a result of the warming related economic meltdown” (303). Many of them lost their homes due to flooding. In spite of this, they are unable to accommodate more people as they require substantial capital and particular skill sets to move on with their lifestyle. If the new entrant does not possess either of these, admitting them would naturally become a burden.

A similar concern about the plight of the common man at the wake of a foundational change in the earth systems is represented in the chapter ‘The Solar Ark’. Herein the reader finds a wealthy family dissolving all their assets on land and

sets out to cruise the world on a state-of-the-art vessel touching land only for catching up and replenishing resources. If the world is set to be increasingly inundated by the rising seas, habitable land will get increasingly scarce. Resorting to live on yachts and ships is an option only for the rich. This might contribute immensely to the existing climate apartheid system and might lead to disastrous consequences.

Yet another very poignant futuristic situation of unfair class stratification predicted in the work occurs in the chapter ‘Deepest and Darkest’. While representing the climate-altered future of African countries, Robinson predicts how the poor and unprivileged might be forcibly evicted from their own lands to make room for the rich to survive. When resources become scarce, people might find religion, ethnicity and money as standards for eviction. “Ethnic cleansing and outright genocide were being actively employed against minority populations around the world – whether religious or ethnic – to make more of the limited food and water available to a country’s majority. Minorities were also being forcibly removed from their homes and lands to make room for a country’s elite displaced by the ocean’s implacable inundation of the coastlines” (268).

If the transition to the world of lower emissions has to be sustainable, it must also be just and equitable. A substantial share of rising global emissions is accounted for by the unsustainable levels of consumption of natural resources and also the extravagant lifestyle of consumers in developed economies. Even in the developing economies, a small but privileged section of the society can be observed leading environmentally irresponsible lives contributing to emissions.

The wealthy nations which are responsible for the lion’s share of emissions of greenhouse gases into the atmosphere, have been rejecting talks on funds and that

they have been stipulated to give the poor and more vulnerable countries to cope with the consequences of global warming and the resultant climate change. Hopefully, the COP 27 Climate Summit held in Egypt in November 2022 found the delegates agreeing to put the issue of whether the rich nations should compensate poor countries most vulnerable to climate change on the formal agenda for the first time (“A First, COP 27 puts climate compensation on agenda”).

Robinson’s narrative can be observed to have done justice to his mission of delineating the inequality and unfair distribution of consequences of climate change. He has effectively touched upon how the least contributors to carbonization are the most vulnerable and how the major contributors always have a Plan B to turn to in case of the worst scenario.

The reading of the primary texts for the representation of the inherent inequality in the distribution of consequences of climate change reveals the multifaceted issues that surround this subject. It also proves how effectively literature can put forth such concerns which are scarcely addressed. The next section addresses the issue of climate refugees which is distinct from yet strongly connected with the issue of unequal distribution of consequences.

### **3.4.1 Climate Refugee Crisis**

A poignant aftermath of the climate crisis is the loss of living space. An earthquake, flood or landslide can create a huge number of environmental refugees overnight. The socio political and diplomatic repercussions of the refugee issue are potent enough to cause worldwide disruptions. Apart from this the humanistic side of the refugee issue is even more disturbing.

All the primary texts address the climate induced refugee issue in specific ways. However, as greater significance to the issue is given by Lorin R Robinson, this section analyzes Robinson's work in detail and does a surface analysis of Atwood and Kingsolver.

The refugee issue is being represented as a significant and distressing consequence of climate change by Robinson. The work depicts a very probable and thought-provoking futuristic refugee scenario. In the fifth chapter of the novel titled 'Exodus', Robinson creates a highly plausible mass emigration scenario in the Viatupu island, part of the Tuvalu islands of Polynesia. It has to be noted that the author speculates this mass emigration for the near future, the year 2027. The chapter dwells in the ruminations of Solomone Lomu, the *ulu aliki*, the high chief of the island as he reminisces on the bold but difficult task he undertook to save the islanders from their sinking birth land by packing them off to New Zealand.

Solomone Lomu had a hard time to make his people realise that the evacuation was necessary. Their homeland for thousands of years was on the brink of being swallowed by the sea. The submerged mountain upon which the atoll sat was sinking into the rapidly rising sea. The warming of the earth was leading to rising sea levels and was also killing the coral that had helped in keeping the island above the waters till now. The warming and the bleaching of the corals had begun decades back, however, the process suddenly acquired heightened pace and the re-growth process of the coral could no longer keep pace with the bleaching process.

The rising sea level was followed by the associated shortage of fresh water. Almost all of the island's fresh water aquifers are contaminated by the rising sea waters percolating into them. The resultant shutting of the wells made catch water the

only water source for the islanders. However, the unpredictability of the rains posed yet another problem. Catch water was sufficient when it rains incessantly but is scarce at those times when rains do not come at all. Moreover, the changing weather patterns had considerably reduced rainfall. The lack of water even leads to the very expensive situation of potable water being important into the island from the mainland.

The combination of all these factors was gradually making Viatupu a terrain hostile to human existence. The beloved island seemed to sag under the weight of the thousand or so people inhabiting her. Solomone Lomu, remembers witnessing the resistance to his attempts waning under the pressure of the antagonistic environment. The Viatupu population had to finally, though reluctantly, address their own status as an environmental refugee.

Robinson presents one of the very poignant pictures of the future of humanity. The environmental refugee status comes initially to the inhabitants of the vulnerable landscapes. But, given the current pace of global warming it is only a matter of time that the whole of humankind turns to refugees and there will be no ground to offer us refuge. The Non-Governmental Organisation named Global Relocation Services depicted in the work is an ominous pointer towards the coming world wherein voluntary bodies helping refugees to get relocated finds place.

Even in the contemporary world, governments and policy makers prioritise the setting up of disaster management cells and providing special training in managing environmental disasters. Such moves, urgently needed in today's unstable world, suggest the growing recognition of the precariousness of existence of life on earth.

Solomon Lomu utters a pertinent statement while speaking to his fellow islanders, “Before long, many other islands, those of Tuvalu and throughout the Pacific, will come to the same conclusion. We must find a place for our people while other nations are still willing to accept immigrants” (66). Lomu’s words foresee the ominous competition and the fatal race that will definitely take place in the real life environmental refugee scenario. The race to reach the dwindling number of safe zones is bound to become a political crisis that has the potential to evoke wars between nations leading to further disaster.

Yet another climate change refugee situation is depicted in the story ‘The Perfect Storm’ which portrays the flight of Suman’s family in the face of a dreadful cyclone in Bangladesh. While sailing away from their home for generations Suman says, “Yes, our land is still there. But it has been ruined by salt water. Even if we could rebuild, we couldn’t support ourselves. Even if we could rebuild, there will be more and more storms like this to destroy us again and again” (103).

Amitav Ghosh, in *The Great Derangement: Climate Change and the Unthinkable*, speaks about his family being environmental refugees. However, Ghosh winds up his story at the point when the clan finally settles in the banks of the Ganges. However, the future environmental refugee might not be able to find completion in a flooded world. Otherwise, human kind will have to resign to the fate of a floating life as seen in the movie *Waterworld* by Kevin Reynolds. When all the ice caps have melted and the civilizations have all drowned, the remaining few of the species might float on the water world in makeshift sailboats looking for a grain of sand.

Such a situation finds depiction in the chapter ‘The Solar Ark’ in which Clarke Wilson, a multi billionaire and his family -including his extended family- chooses to

spend the rest of their lives on the sea sailing on a specially designed luxury yacht. The yacht, which the owner calls 'beyond state of the art', has been built with all the facilities of a lavish life within. The personnel on the yacht includes doctors, nurses, teachers for the children, health trainers and chefs. Mr. Wilson says that he has taken great efforts to keep the vessel as environmentally friendly as possible. He foresees a time when living on land would be impossible and so decides to live a life on sea without giving up any comforts of the land. "We're a close-knit bunch and have decided to throw our lot in with the ocean instead of trying to fight it as everyone else seems to be doing. We've sold our homes, are moving on board and plan to cruise the world. That's not to say we will never again set foot on *terra firma*. Of course, we will. But this will be home" (178).

Robinson locates the story of the sailing family in the year 2034 by which time he speculates that erecting infrastructure like sea walls to protect the land from the rising seas will start to prove futile. Mr. Wilson's story depicts an instance of acceptance rather than denial and the readiness to adapt to change. However, the measure he has adopted raises serious concerns about the options or lack thereof for the majority of the world's population who are not multi billionaires to afford yachts.

Atwood touches upon the environmental refugee issue through Oryx's past. She vaguely remembers some eastern countryside hit by drought and subsequent poverty. Oryx and her brother, as little children, are being sold off by her mother to an agent in the hopes that they will get a chance to survive in some other part of the world. The long and winding journey rendered through the memory of a little girl brings out the distress and helplessness of people forced to leave familiar surroundings for a strange world. More disturbing is the fact that almost all the

children given away by parents in hope of giving them a better life are actually sold off to sex slavery and they never meet their parents again.

Kingsolver brings forth the refugee issue in *Flight Behavior* through the depiction of Josephina's family who are forced to leave Mexico in the aftermath of a destructive landslide. The family is left to fend for themselves at the mercy of new found friends and live in constant fear of being confronted for their illegal immigrant status.

Thus, all the three authors agree upon the fact that the climate refugee scenario is a huge socio-political issue that might only amplify into greater and more complex concerns in the future. The relevance of speculative fiction in logically projecting the possible future is noticeable when scanning through the current climate change discourses. The author imagining a mass migration from Polynesian islands in 2027 can be seen in correspondence with the fact that during the discussion of coal in the United Nations General Assembly in 2022 September, the President of Vanuatu, a small Pacific island, demanded that the General Assembly adopt a universal Non Proliferation Treaty to ban the use of fossil fuels across the world ("A First, COP 27"). Such a call by a nation whose contribution to global energy supplies and emissions is negligible speaks volumes about the threat island nations face and also signal the spread of climate change awareness and risk perception.

### **3.5 Climate Change Denial**

Climate change scepticism and climate change denial generally refers to the tendency to deny, dismiss or doubt the scientific consensus on global warming as a significant reality or the rate and extent of its repercussions or the agency of human species in it. Climate change denial has always been a hindrance to productive action



on climate change. Denial and scepticism have been noticed among various sections of the society, even among the scientific community and the knowledgeable sections of the society, for various reasons like issues of perception, inability to face risk, intangibility and farfetched nature of the problem and so on.

Environmental sociologist Kari Marie Norgaard in *Living in Denial: Climate Change, Emotions and Everyday Life* explores the unresponsiveness of people in the face of alarming reports by climate scientists, rising temperatures and environmental disasters. The perplexing apathy of people to conversations on global climate change which is “arguably the single most significant environmental issue of our time” (Prologue xv), makes her investigate the psycho-social- cultural reasons for it. The work throws light on the ways in which social and cultural ways affect and define the public perception of climate change. According to her the main source of denial is the disjuncture between the collectively formed sense of everyday life and the distressing fact of climate change and the human contribution to it. Norgaard describes the conflicting mental landscape wherein climate change is both incomprehensible and common knowledge.

She distinguishes three different forms of denial:

1. Literal denial of the existence of climate change.
2. Interpretive denial—deliberately interpreting change to make it seem positive.
3. Implicatory denial – denying the socio, political and moral implications of climate change.

Four different factors have been identified as the cause of climate change denial – political and economic circumstances, machinations of the lobby groups and the media, social norms and individual psychology. Among these, Norgaard considers

that individual psychology is the most pervasive and influential factor leading to climate apathy. She argues that people tend to block the topic from their minds to avoid feelings of fear, guilt and helplessness. Climate denial is a form of evasion - through the frequently unconscious ordering of information about global warming and climate change in such a way that it remains outside the world of everyday reality. Human beings tend to block information that undermines the established and comprehensible meaning systems, desirable emotional states and most of all, our own sense of our ability to control our lives. The knowledge of climate change is one such entity that can destabilise such conditions. It also challenges the conception of individual and national identity. Norgaard observes denial as a socially organised process by which people collectively distance themselves from information, through adherence to social norms and by using a range of means inherent in their culture.

Climate change being a daunting and distressing subject, people unconsciously adopts displacement strategies screening out such information. The strategies of displacement listed out by Norgaard are:

1. Changing the topic to something less worrying.
2. Focusing on an aspect about which action can be taken.
3. Treating the subject with humour intending to release the pressure associated with the uncomfortable emotions raised by such topics.

Norgaard also points out that media can be found to represent the subject in slightly reassuring terms – manipulating words to present a distressing climatic event as unique and rare, reminding humankind of their inherent toughness, emphasising that everything is going fine and smoothing over difficult questions. Apart from this, the tendency of the media to redirect attention to local happenings and the past, makes

it difficult for the readers to conceptualise the massive scale of time and scale in which the phenomenon of climate change exists.

Norgaard draws the concept of ‘cultural toolkit’ from sociologist Anne Swidler to elucidate the role of culture in creating mental landscapes regarding climate change. Swidler suggests that the influence of culture upon human actions is by providing a repertoire or toolkit of “chunks of culture”, in the form of stories, rituals, symbols and worldviews, at their disposal. Such publicly available meanings enable certain patterns of action, while discouraging others. Climate change denial, thus, can be carried out through a cultural stock of strategies and social narratives which aids in achieving ‘thought prevention’, ‘perspectival selectivity’ and ‘selective interpretation’ (94). According to Norgaard, ignoring climate change is an active process which mutes knowledge of it and cares about its consequences in order to protect individual identity and sense of self sufficiency, and to sustain culturally created conceptions of reality.

Among the authors selected for study, Barbara Kingsolver and Lorin R Robinson have been observed to deal with concerns related to climate change denial. Analysing the novels of Kingsolver and Robinson in the light of Norgaard’s observations help in perceiving the role played by literature and other cultural representations in identifying and confronting climate change denial among the people. As both authors have undertaken to represent different aspects of denial, each of them has been studied separately in this section.

### **3.5.1 Climate Change Denial in Kingsolver’s Works**

Kingsolver represents climate change scepticism and denial in many manifestations through her works. *Flight Behaviour* in particular presents a detailed

portrait of climate change denial especially among the small-town communities and farmers who are affected by but lack proper knowledge about anthropogenic global warming. As against the usual portrayal of commercial, corporate and political interests as the reason behind denial, she focuses on the everyday life and worries of uneducated people living in near poverty and geographical seclusion. The intrigues of lobby groups encouraging environmental apathy and the malignant intervention of the media are present but relegated to the background.

Examining the role of narrative patterns in Kingsolver's novels in articulating the conceptions of nature, individual identity, climate and environmental risk is significant in placing the part of literature in communicating climate change and the shades of climate change denial. Religion has been represented as a major influencer in creating an attitude of climate change denial by Kingsolver. As that aspect has been discussed in the section 3.4.2 it will not be further delineated here. The upcoming subsections delineate other aspects of climate change denial as depicted by Kingsolver.

### **3.5.1.1 Climate Change Denial of the Common Man**

Apart from the usual discourses on climate change denial as a matter pertaining to complex political- economic and corporate interests, Kingsolver gives focus to the way in which climate change affects the general public, especially the middle class and below. Climate change denial on the part of the general public is an invisible but highly significant and of cumulative consequences. Kingsolver analyzes the reason for and the manner of denial of the common man.

All the three novels studied here portray characters trapped in family and societal troubles constructed by various situations. Most characters are haunted by

loan repayments made impossible by poor harvests or any similar trouble. Bear Turnbow, Dellarobia's father-in-law, has signed a contract with a logging company to log all the trees in the mountain behind their farm in order to repay a mortgage he undertook to buy farming equipment. Similarly, Lusa in *Prodigal Summer* has to find some way to repay the loan her husband incurred for buying a tractor. The easiest path before her is to sell his farm and relocate to the city. Willa's family in *Unsheltered* is literally unsheltered in their crumbling family home with her husband's income cut down to half due to governmental policies. Conversations among characters in *Flight Behaviour* and *Prodigal Summer* suggest that the dire financial circumstances haunt the whole community. Globalisation, industrialisation and climate change are the major causes behind this. *Flight Behaviour* has an occasion wherein Dellarobia finds it difficult to express the complex socio- climate- financial situation her family and her community is in. "She wished she could just tell the truth. The whole of it. That Bear was about to clear cut this mountain for cash and that they really did need the money. Which some people could never understand. Being boxed in" (Kingsolver 208).

Dire financial straits make liquidation of assets the only possible way out. For land owning farmers like Bear Turnbow logging offers respite for the time being. Most of them prefer clearcutting rather than selective cutting as it is easier and lucrative. In *Prodigal Summer* a history of extensive logging of chestnut trees is mentioned. The downward economic trend of the village community has a long-term history which is portrayed through the story of Dellarobia's parents in *Flight Behaviour*. Her father was a cabinet maker and mother a seamstress, both of whom lost their jobs to cheap mass production and import of foreign clothes and furniture.

The people are not in a position to care about the danger of causing mudslides from the exposed mountain slopes.

Kingsolver does not take an accusatory tone while depicting the denial tendencies of the people. She attempts to unmask the reality and helplessness behind the denial. They live in a world over which they have no control. Logging, poaching and pesticides form part of their war for livelihood. The bleak picture of the rotten tomato crop of Dellarobia's neighbours who gave up using pesticides as their son contracted cancer is a poignant symbol of the helplessness of the common man.

Same is the case with ranchers and farmers living near the forests. They can never perceive predators as part of the nature in which humans and their cattle dwell. However, as Kingsolver tries to portray in *Prodigal Summer* the predators are the least threat to their livestock for they have their bounty in the forest itself. They prey upon mice, deer and other animals found in the forest. In spite of this, the predators like coyotes are being hunted down by farmers as they give them "an enemy they can look at through a rifle sight" (Kingsolver 183). Deanna tries her best to reason with Eddie to convince him that coyote is not a threat to his ranching: "...you can't walk right or left without stepping on some family that's lost its farm to bad luck, bad weather, chestnut blight, (climate) change, economics, the anti-tobacco lobby. You name it, there's some farmer I know who got eaten by it" (182). Leading day to day life is the greatest priority for the middle class and poor who are hit by recession and climate change. Clearest impact of climate change on the people can be measured in terms of money. Businesses depending on the predictability of the weather tend to fall from grace as a result of climate change. The unusual weather strongly impacting the local economies is depicted strongly in Kingsolver's fiction. The family of Josephina in *Flight Behaviour* who are illegal migrants from Mexico is a sad example of

environmental refugees who were forced to leave their homes due to disasters brought about by climate change. However, confronted with owing up to the consequences, the normal human being is helpless. During one of the arguments that Tig and Willa have, Willa blurts out, “I am human, Tig. We live, we consume. I think that’s just how we have to be” (Kingsolver 410).

Dellarobia’s initial response to the discussion of global warming is one of extreme caution, “Climate change, she knew to be wary of that” (Kingsolver 147). This corresponds to Norgaard’s idea of interpretive denial of climate change. Dellarobia is aware that the people of her community, including her husband Cub, have a “wariness for people who wanted to save trees for trees’ sake.” For, it is “An easy want, when they weren’t your trees, or for your foreclosure” (44). Similarly, trying to protect “endangered” (53) species arouses suspicion and hostility in her community as it hinders the farmer’s freedom of action.

More importantly, the scientists, whom the villagers consider flashy and godless are also seen with suspicion. “You guys aren’t popular. Maybe your medicine’s too bitter. Or you are not selling to us... You should start with kindergartners and work your way up” (321). The general public tend to keep a certainty that the actions of the scientists, which are beyond their comprehension, will in some way keep the problem at bay. Kingsolver attempts to describe how dealing with climate change is beyond science as science can only state facts. A handful of scientists cannot make a palpable change. It is to be done by the socio-political-administrative system and the awareness and participation of the public is crucial in bringing about productive action.

The general belief among the people is that global warming, climate change and the various programmes initiated to thwart these are issues for “them”, meaning the politicians, administrators and those in power and not “for us” (321). Dellarobia says, “The environment got assigned to the other team. Worries like that are not for people like us. So says my husband” (322).

Kingsolver depicts how the identity of a community used to living by hunting and logging is that of being intuitively suspicious of flashy scientists, protesters and urban intellectuals interfering in their lives and asking them to ‘change’ their lifestyle by giving up the only livelihood that they know. “... climate change denial functioned like folk art for some people, he (Byron) said, a way of defining survival in their own terms” (395). Climate change denial comes from being denied their identity and cultural foundation and as Juliet says, “once you are talking identity, you can’t just lecture that out of people” (395).

A conversation between Dr Byron and Dellarobia touches upon the crux of climate change denial. Human beings have got used to the idea of their persistence. The long history of ‘ages’ behind the species makes them think hopefully towards the ages that are to come. Byron says that with this false optimism, the popular form of behaviour is to refuse to look at the evidence placed in front of them. Dellarobia tries to defend this by saying that “People can only see things that they already recognise... They’ll see it if they know it” (282). Thus, the aspect of intangibility of climate change is stressed again. Asked about how the people see the end of the world, her reply is “They know it’s impossible... There’s just no room at our house for the end of the world. Sorry to be a doubting Thomas” (283).



False optimism expressed by various people in the narratives corresponds closely to Norgaard's conception of individual and social mechanisms manipulating emotions and suppressing feelings of guilt, fear and powerlessness. As Dellarobia remarks, "The human person cannot face up to a bad outcome, that's just the deal" (196). They come to think of climate change as an actual issue only when it reaches their doorsteps. It has to be noted that defensive conversations in terms of "but that's there, this is here" recurs in all the three novels. The plight of Josephina's family comes as a shock to Dellarobia, even though she is already familiar with natural disasters through the media. However, meeting a family who has actually lost everything to a landslide seems strange and frightful.

Yet another observation regarding the inability of the people to respond aptly to the climate change situation is that the possible actions to mitigate climate change are beyond the spectrum of their normal lives. The encounter with the character Leighton Akins who wanders the butterfly site distributing a 'Sustainability Pledge', listing out "things you promise to do to lower your carbon footprint" (326), is an eyeopener. Asking an economically weak community to bring their own Tupperware for leftovers while visiting a restaurant seems ridiculous. The environment checklist which ranges from socially responsible investments, Craigslist, low- emission vehicles and a final admonishment to 'fly less" (329), proves to be irrelevant for the commoner.

It can also be noticed that if at all someone realises the need for taking action and acts accordingly, they are often ridiculed, scorned and isolated by the rest of the community. For instance in *Prodigal Summer*, Deanna, with her fierce will to reduce logging and to save endangered species, leads a reclusive life in the jungle. Her ideologies seem to verge on lunacy for her husband who is a professor of Biology.

Nannie Rawlie is branded as a lunatic and is scorned by the society for being non-religious. Lusa is despised and ridiculed by her husband's family for being an insect lover. Similarly, Dellarobia's awakening into her responsibility as a human being makes it essential that she separate from her husband. And in *Unsheltered*, it is worth noting that Tig, who is the only person concerned about the changing climate and is determined to change her priorities and lifestyle for the sake of a safer world, is considered the black sheep of the family. She is considered 'abnormal' and 'queer' for being a midget and for her ideologies that diverge vastly from that of all other members of the family. In Willa's thoughts Zeke is always the favourite son who satisfied her with his good looks and his conformity to the educational choices considered standard and acceptable by the society. Thus, Kingsolver depicts how the normal human being, meaning people other than scientists, intellectuals, politicians and the corporates, perceive climate change. Climate change is just a familiar term for them. They are unable to connect it with their own lives even when they face the consequences of it. Political affiliations, media and economic circumstances blur their vision of the climate scenario and this confusion leads to avoidance and denial.

### **3.5.1.2 Role of the Media**

Media, as depicted outstandingly in *Flight Behaviour*, plays a major role in manipulating public conception of climate change. It seems as if unable to form an understanding of climate change for themselves the people have delegated the responsibility to media platforms. "Nobody truly decided for themselves. There was too much information. What they actually did was scope around, decide who was looking out for their clan, and sign on for the memos on a wide array of topics" (166). The news coverage on environmental disasters "sounded ghoulish, like voyeurism" (103). Compared to the daily reports on climate change-induced events all over the

world, the real confrontation of the victims of such a disaster rattles Dellarobia. On meeting Josephina's family she "...had no idea what to say to a family that had lost their world including the mountain under their feet and the butterflies of the air" (103).

Kingsolver condescends with the need of the media to respond to the public demand, but reprimands them for doing so without any scruples and devoid of ethical or moral principles. Rather than collecting authentic information, they try to capitalise on the prevailing view of the audience and more importantly, their sponsors. As Pete, the post doc fellow researching with Byron observes, "The official view of a major demographic is that we aren't sure about climate change. It's too confusing. So, every environmental impact story has to be made into something else. Sex it up, if possible, that's what your news people drove out here for. It's what sells" (230).

The high profile media team that approaches Dellarobia for an interview is not interested in meeting Dr Byron who could provide them with the exact reasons behind the butterfly phenomenon. However, they force themselves upon her, sensationalising the issue to give it an emotional and 'spiritual' appeal that would easily sell their story. "This phenomenon is very special to you," Tina said. "The story we are hearing in this town is that you had a vision. So Dellarobia, what happened that day, when you first knew the miracle of the *monarchs* had come to your farm?" (208). Instead of going into the personal aspect of the butterfly landing, Tina, coming from a powerful media platform, could have made the ethical choice of investigating the scientific details of the phenomenon and could have unravelled a visible consequence of climate change to the larger world. But she takes greater interest in unscrupulously publicising the personal life of an unsuspecting Dellarobia. "Nobody was asking why the butterflies were here; the big news was just that they *were*" (212).

Later on, when Tina actually comes face to face with Dr Byron, his painstaking effort to explain the state of things to her fails as she concludes with finality that “we can agree these butterflies are a beautiful sight” (364). In addition to depicting how the media misrepresents the idea of climate change thereby moulding the public opinion in erroneous ways, Kingsolver uses the dialogue between Tina Ultner and Dr Byron to bring to light a number of concepts that eludes easy representation. When Byron says “This is evidence of a disordered system...Pervasive environmental damage. This is a biological system falling apart along its seams...Unseasonable temperature shifts, droughts, a loss of synchronisation between foragers and their host plants. Everything hinges on the climate” (364), the idea of climate change is directly connected to the butterflies whose advent is otherwise seen as ‘sight of beauty’ and ‘divine blessing’ (207).

The survival of the media hinges on the popular trend and the corporate interests. The conversation between Tina Ultner and Dr Byron proves that the world of the media and reality are parallel. Tina frostily tells Dr Byron that his take on the issue will make her channel lose its audience. Moreover, she brings forth the age-old media trick of smoothening over the issues by mentioning that “Scientists (of course) are in disagreement about whether this (global warming) is happening, and whether humans have a role” (366). Kingsolver makes Byron give the definitive reply that disagreement among scientists about the reality of global warming is a thing of the past “unless some other outcome is written on the subject line of his paycheck” (366).

Kingsolver, through Byron, declares that the time for climate scepticism is long past. The only point of disagreement among the scientists is on what to talk about – the world is on the threshold of a kind of mass destruction. Therefore, deciding upon which aspect to talk about is the greatest challenge – melting glaciers,

collapse of the Arctic, extinction of species, hurricanes, floods or forest fires – for all these point towards climate change. The image of humankind on a canoe on top of the Niagara Falls helps to stress the urgency.

We are on top of the Niagara Falls...in a canoe. We got here by drifting, but we cannot turn around for a lazy paddle back when you finally stop pissing around. We have arrived at the point of an audible roar. Does it strike you as a good time to debate the existence of the falls? (367)

The corporate involvement in creating scepticism is also touched upon by the author in the argument between Tina and Byron. Byron reminds Tina that the same corporate outfit that ‘manufactured doubts’ about the smoking-and cancer contention some years back is now doing the same for climate change. He accuses the media of not being interested in real inquiry and “doing a two -step with (your) sponsors” (369). From her encounters with Tina and listening to her television and radio, Dellarobia learns to recognise how the media “archly twisted comedy with news” (187), deflecting attention from the seriousness of the issue and how they manipulate, simplify, normalise and ridicule it in order to keep up their ratings and to please vested interests. Therefore, it can be found that Kingsolver does a successful depiction of the media as a primary influence in manipulating public opinion about climate change. The novel also throws light upon the vulnerable mindscape of the people who tend to believe the interpretations of climate talk that appeals to their sense of safety and identity. The way in which media depictions of situations convolute actuality has also found rendering in the novel.

### 3.5.2 Climate Change Denial in Robinson's Work

In *The Warming*, while attempting to represent climate change denial, Robinson opts to depict the corporate- political agendas behind the extensive denial system that pervades the consciousness of the people. He also shows awareness and sympathises with the people who try to hold on to their traditional spaces of living by vehemently denying the environmental risk factors. The preface depicts Jon being reproachingly named 'Dr Doom' for suggesting that spending billions on building sea walls to contain the rising seas is unproductive as the sea walls will eventually fall as the water will keep rising. His alternative idea to evacuate the coastal areas and to use the space for underwater cultivation of food in order to prevent famine is viciously scoffed upon and condemned.

Instances of climate change denial can be found throughout the work as divulged through dialogues and incidents. Jon's memories about his high school essay on climate change as being criticised for 'being biased' (3) can be seen as a typical example of denialism. A reflection of such denialism can also be seen in the future when Jon is denied tenure renewal in the university he had been teaching. He gains the displeasure of his colleagues and superiors through his controversial articles on the futility of spending billions of dollars on constructing seawalls to prevent rising water invading the land. Instead, he suggests evacuating the coastlines and using the space for underwater agriculture as climate change would bring about an imminent famine and shortage of food. As Jon's pragmatic suggestions go against the public opinion and the interests of the political parties and corporates, his university denies him tenure. The committee states that his opinions have "reflected poorly on you and the institute as well" (131). Here, Robinson reveals a dangerous tendency where even the scientific community, who are well aware of the consequences of climate change

and the urgency of taking practical measures to tackle it, joins forces with the deniers only to be on the favourable side of the vested interests.

The author makes use of dreams as a narrative mode to represent climate change denial. Jon's dream of the burning house is a strong image representing denial and inaction. The burning house represents the earth and Jon's inability to act epitomises the general inaction and careless attitude towards climate change. Jon makes use of his dream to prove his point about the aimless work done by the knowledgeable sections of the society at the tenure committee. He asks them to imagine a group of scientists and academicians converging to witness a burning house. "They observe, watching the flames shoot ever higher. No one thinks to check if people are still inside. No one thinks to call the fire department. No one thinks to run to neighbours to look for garden hoses. All stand impassively and observe" (133). Instead of trying to act pragmatically, what the scientists would do is to investigate the various micro aspects of the conflagration. Jon says,

One scientist calculates heat generated by the burning building. Another, how many gallons of water would be required to douse the flames. Another spectra-analyses the flames to learn what materials are burning. Still another samples outgassed materials to determine what pollutants are being emitted. Others investigate the temporary micro climate created by the blaze, and the impact of the fire on proximate flora and fauna. (133)

As this aspect of climate change denial has been discussed already in the previous chapter in the section 2.5.4.2, a detailed analysis is not done here.

Jon's speech prior to his dignified exit from the tenure committee, expounds the increased inability of the scientists and academicians to do useful climate action.

He is disdained at how his colleagues could stoop to turn a blind eye upon things that they know fully well to be forebodings of disaster. “It’s become my belief that science is not part of the solution to our rapidly developing global calamity. And, if that’s the case, it must be viewed as part of the problem... We propose research projects we know or hope will interest our funders” (132).

The author delineates how climate change and its various consequences, including the question of the survival of the human species, is given the least priority by almost all sections of the society. The common man who lives in the coastal area unleashes a vicious tirade on Jon for suggesting their removal from their home fears for the future of his family and does not want to face the truth of losing the land to the sea. This corresponds to Kari Norgaard’s concept that the main source of denial is the disjuncture between the collectively formed sense of everyday life and the distressing fact of climate change. Moreover, the economically weaker sections of the society find it almost impossible to adapt to change as it would break their foundations. The man on television says that “We can’t just up and move. We have no money and nowhere to go. If those guys are so smart, why can’t they come up with solutions that work? Lord knows they have had plenty of time. All we hear from them is doom and gloom. Thanks a lot, Dr Doom” (14).

In yet another form of denial, the author depicts the failure of wealthy enterprises with actual capacity to act, giving the least priority to the warming. An illustration of this kind of denial is found in the attitude of Cargill, the global agricultural products giant, who contacts Jon as he was being pilloried for suggesting giving up on coastal cities. They invite him over to discuss his idea of underwater farming. However, two meetings hence they withdraw from the proposal quoting that



“the concept doesn’t fit current company priorities...the company didn’t have money to throw at a highly speculative venture” (11). This is a significant pointer towards how the system of denial prioritises mercenary factors above food production and survival.

The role of the media in boosting the attitude of denial is also touched upon by the author. The massive scorn that Jon has to face in the wake of his article stems from the inept, irresponsible and biased reporting strategy of the media. As the CNN’s Science Unit approaches him for an interview, he hopes for a platform to vindicate his claims and answer genuine doubts and misgivings. However, the actual interview is rooted for sensation rather than serious discussion and therefore, ends up in his claims being ridiculed, exposed to public judgement and scoffed at without giving him a chance to clarify his points.

In the chapter “Finger in the Dike”, the author attempts to address another major reason for denial in large countries with heterogeneous systems and populations. The Kent Whitaker plot set in the year 2031 discusses how Denmark has adopted technology and lifestyle that allows them to survive and live with climate change rather than trying to fight it. The city of Rotterdam has started building floating buildings and has also built craters in downtown plazas that are used as athletic facilities during dry time and can be filled up with runoff water during floods taking the strain of the surrounding streets. Plans are also on for floating villages “that have their own desalination plants and wind generators” (137).

Mr. Jan de Vries, the Director of The Netherland’s Office of Spatial Planning and Water Management, says that in spite of his great wish to persuade his counterparts in America to work on similar lines he “has become sceptical about

anyone's ability to effect meaningful change" (137). He recounts observing a team of engineers rebuilding storm walls destroyed by hurricane Sandy. As he asks them what they would do if it was destroyed again, they answer that they would rebuild it again. He remembers yet another example when a mayor of New York City proposed a 20-billion-dollar plan to take some reasonable steps to protect the city. However, subsequent administrations implemented only a few of his plans and diverted the amount for other purposes. The cause for this indifference is that unlike Denmark, which is a homogenous country, the USA has a very heterogeneous culture and is also geographically vast and diverse. It is practically impossible to make a unanimous decision as decision making takes place in the local, state and federal levels and the requirements for each state or province is different from that of the other given the vastly different geographical and climatic texture of the places. Moreover, the pressure of complex political agendas is also massive. Therefore, de Vries says, "...I doubt there is the will to take concerted, organised and effective action. Americans, it would seem, prefer to clean up after flooding rather than work to prevent it" (138). This, by extension, can be understood as the situation in other large countries like Russia, China, Canada and India. Thus, it can be observed that the work underscores that the mechanism of denial is bound to exist even when warming has reached its zenith as it is human nature to ignore or refuse to believe uncomfortable truths.

The aspect of climate change denial as represented by Barbara Kingsolver and Lorin R Robinson gives a cross section of the various ways, causes and consequences of climate change denial that occurs in society. The texts help in proving that climate change denial is a symptom that is deeply integrated into the human psyche and it is established and strengthened by diverse socio-cultural paradigms. The importance attached to cultural traditions, construction of identity, symbols, stories, worldviews

and rituals as factors shaping the perception of risk by sociologists like Norgaard accentuates the contribution of literature and the humanities and literary criticism in shaping climate discourses and studies of risk perception.

### **3.6 Climate Change and Mental Health**

The advent of climate change and the dispersal of knowledge about this has given rise to climate related psychological issues among the populace. The complex and confounding information and the narratives predicting doom and destruction are potent enough to give rise to depression or related issues among people who experience it. This often-unaddressed aftermath of the climate change scenario is also one of the socio-cultural impacts of the phenomenon. Robinson addresses the issue of climate change anxiety and related concerns.

The conversation between Jon and his daughter presents the latent anxiety experienced by young people who seem to look at climate change as a potential hurdle to their plans for the future. The future for the young generation seems to lack any guarantee as their plans and decisions are prone to change at any point of time given the instability of climate.

The concerns articulated by Jon's daughter are also shown to be true through the destructive earthquake that shatters all her dreams and plans. She loses her partner with whom she had elaborate plans to build up a life and her home, her college is destroyed and all the documents that gave her identity are lost in the earthquake. As such natural disasters become common, the consequent anxiety and insecurity inevitably lead to serious mental health issues, especially among the young. Through the depiction of Jon's sessions with his psychologist and his conversations with his

daughter, Robinson succeeds in presenting climate change as a phenomenon that might actually impact the mental health and sense of security of people.

Similar issues of climate change guilt and a resultant avoidance of the issue has been represented by Kingsolver too. For instance, the analogy of smoking is a strong trait found in both *Flight Behavior* and *Unsheltered*. Dellarobia is depicted to be a compulsive smoker who finds it impossible to quit. Her smoke clouded perception is analogous to the confused mindset that leads to climate change denial. As Dellarobia moves from denial to understanding and action, her smoke addiction is said to have cleared. Similar is the case of Willa in *Unsheltered*. Willa's addiction to smoking is also seen as representing her lack of concern for the environment which she gives up along with her adoption of a new, environmentally conscious lifestyle.

In *Flight Behavior*, Cub's tendency for constant channel surfing and not focusing on any particular program is analogous to the human tendency to change the subject of discussion as soon as being confronted with distressing facts. As discussions on climate change arise, people, represented here by Cub, might be held by a vague sense of guilt for not being able to act properly about the situation. The confusion about the proper course of action can be considered as an aftermath of the lack of complete knowledge about the phenomenon. This might lead to a lack of focus which is a form of climate change denial which Kingsolver depicts through the analogy of Cub's channel surfing.

Almost all the young people in the pre apocalyptic world of the Trilogy are pictured as suffering from one or another kind of mental disturbance. Jimmy is portrayed as an introverted, lost and psychologically weird character owing to his dysfunctional family, which in turn is brought about by the climate altered socio-

political situation. Crake's perverted mind leads him to destroy the human race as he identifies humanity as the root cause of the disturbing socio-cultural and environmental situation of the pre apocalyptic times. His deranged mind recognises that destroying the human race can give nature a chance to regenerate and survive. His psyche has inevitably been brought to this state by the traumatic experience of his past which can be traced back to the climate change situation. Similarly, Oryx, Ren, Toby and Amanda are all presented to have gone through the trauma of surviving in an inhospitable environment making them indifferent, cold or non-reactive to provoking situations. Thus, it can be seen how the primary texts attempt to illustrate climate change as affecting the mindscapes of people thus altering the deep-set dimensions of the socio-cultural settings.

### **3.7 Environmental Terrorism/ Activism**

The rise of environmental activism, that can also be deemed as environmental terrorism, according to the ideological orientations of the beholder, has also found depiction in the primary texts. The unequal distribution of consequences of climate change, realisation of the political and economic play behind the manipulation of policy and governmental decisions on climate change and the other issues related to the socio-cultural fabric can lead to such uprisings. Atwood and Lorinson represent two different aspects of environmental activism that might come up.

The account of Zhan Ahlim in *The Warming*, placed in China in 2038, reflects the narrative of God's Gardeners in the *Maddaddam* Trilogy. Here, Robinson speculates the rise of ultra-secret organisations vested upon working against the anti-environmental acts of the administration and the privileged sections of the society. The code of conduct of the organisations echoes that of the Gardeners. The huge gulf

between the main perpetrators of the warming – which includes the corporates and fuel business sectors – and the vulnerable sections of the society that face the consequences gives rise to resistance from the latter. Robinson envisages a future scenario wherein environmental activism verges upon terrorism and opts for massive destruction.

Ahlim, a girl with immense ambitions for her life, sacrifices her own life to destroy a coal powered factory which emitted the poisonous gas that killed her brother and several other people in her neighbourhood. Through Ahlim's story, the narrative foresees a disastrous and unfortunate turn that environmental activism might take as a result of the increased human induced warming. Smiley, the leader of Ahlim's eco activist wing says,

Understand this clearly. We are at war with those who are ruining the planet. Our mission is to strike at the very heart of China's CO2 emitters and show the world that there are Chinese people who oppose what the country is doing. I needn't remind you that our country continues to be the world's largest source of greenhouse gasses. (213)

The situation is that the administration prioritises the hunting down of eco activists and turns a blind eye on the hundreds of corporate run facilities that avoid spending on technology that helps eliminate the expulsion of poisonous gasses into the atmosphere. Robinson reflects upon how such machinations spew unrest among the vulnerable leading to violence and anarchy.

Apart from depicting the materialistic tendencies of the upper class leading to chaos, the author also touches upon yet another crucial aftermath of the warming which is the fight over resources. The chapter 'Deepest and Darkest' poignantly

exposes a future world which has been reduced to people resorting to excessive violence over food and resources. The chapter presents South Sudan in the year 2039 where the two tribal clans Nuer and Murle are engaged in a calamitous warfare resulting in loss of human lives every day. The socio political and environmental reasons behind the warfare have been delineated in the narrative. The war between the tribes started long back when the ruling party decided to drain off the oil resources of the country to China. As one section supported the party another section fought against it. Ultimately, the party consisting mainly of members of the tribe Dinka garners their profit, consolidates power and rules for “twenty eight years without materially improving the country’s economy, health and wellbeing of its people – with the possible exception of Dinkas” (269). What is significant is that the two rival factions continue to fight for what resources are left for their survival.

The story progresses through the perspective of Dr Jean Phillippe Bertrand - J P - who had previously been part of the medical team tending to the refugees who were escaping genocide in the then undivided Sudan’s Darfur province in 2011. He returns to South Sudan in 2039 feeling that no other place deserved his services better as “the warming had dramatically increased the need for the organisation’s services but funding and volunteers had dropped significantly. Famine related disease was increasing exponentially” (268).

He reaches South Sudan to find that droughts and the northwest winds inexorably expanding the desert robbing viable land from Mali, Niger, Chad, Sudan and Eritrea, thus leading to more fight over resources. The country he finds himself in is very inhospitable both in terms of environment as well as political situation. J P, with the few remaining health workers, tries to save as many as possible from all factions. They work in a very precarious environment as medical camps and other

facilities, where there will be a substantial number of people at all times, were often the target of the attackers.

Robinson speculates about how the international agencies like the United Nations might become increasingly unable to curb such violent uprisings as they become more frequent and widespread. In J P's account, the United Nations Peacekeeping mission, which usually extends support and protection to such medical teams working in countries affected by ethnic violence are shown to be unable to give them proper protection as the UN peacekeeping operations worldwide were hampered by diminishing financial support from member nations. Many member nations on their part had "simply stopped paying their dues to divert funds to help meet warming created internal needs" (272).

Speaking about the anarchy prevailing in South Sudan, a native tells J P,

The people have long memories. Over the decades thousands have been killed, many more injured and tens of thousands made homeless. Countless children have been kidnapped. And many thousands of cattle have been stolen. Both sides have committed atrocities. And, as the warming continues to shrink grazing land, the conflict has intensified (275).

At this, J P muses that even if one of the factions eliminates the other, the remaining would not survive for long as the warming intensifies. As the battle here is for grazing lands, he realises that very soon they will have to give up their traditional way of life "in the face of the south bound march of the Sahara and the desertification that will make obsolete the term 'Sub-Saharan' (275).

J P works day and night at the medical tents tending to people suffering from maladies that stem from poverty, hunger and unsanitary conditions. Victims of



violence come in almost every day taking the caregivers to the edge of their sanity. Two weeks into his adventure, the facility is attacked by the Nuer tribe killing everyone except J P, a nurse and three orphaned siblings whom they had given shelter in the tents. Even when J P and the other volunteers risk their lives to help the victims, their efforts prove futile. The only saving grace is that he, though after a long legal fight, is able to adopt the three kids.

Through the narrative, Robinson portrays how, as time progresses, warming might create a race for survival so vehement that only the strongest will survive and that survival too is bound to be problematic with the rapidly diminishing resources, rising waters and spreading deserts.

Atwood's portrayal of eco terrorism manifests primarily in the form of Crake's bioengineered apocalypse. The presence of various environmental groups like the God's Gardeners and Wolf Isahaists in the pre apocalyptic world with their signature methods to combat the exploitation of nature can be seen as the augury of a climate altered future teeming with such groups

Then the Rarity Restaurant Chain was obliterated by a series of lethal bombings. She saw the regular news, where these events were blamed on unspecified eco-terrorists... It was the Wolf Isahaists who had done the bombings... because Rarity has introduced a new menu item - liobam, a sacred animal for the Wolf Isahaists. (Atwood 323)

The inevitability of such uprisings as a result of the complex workings of the political, financial and cultural machinery in relation to climate change has been portrayed by the primary texts in detail. The inequality, unfair distribution of consequences, refugee situation, poverty, health issues and general distress caused by environmental

damage is sure to give birth to such activist groups that might render the situation more complex. The portrayal of this futuristic scenario in the primary texts signals at the potential of literature to conceive of the risks of climate change and to portray it.

### **3.8 The System of Education**

Education wields a prominent place in the formation of socio cultural environments of the society and the individual. The perception of climate change by the individual and society as a whole is simultaneously being an influence upon and influenced by the system of education. Just like religion, education is also an institutionalised system that can be manipulated by vested interests thereby forming ideologies catering to their interests. Similarly, the right kind of education is a powerful tool that can steer the public consciousness towards an environmentally conscious life.

Atwood has invested a prominent part of the narrative to deliberate upon how climate change can affect the system of education and vice versa. The education system of the pre apocalypse era is set to be deeply affected by the climate altered scenario, though the impact of climate change is not overt. The priorities of the education system seem to have altered considerably given the prioritisation of techno fixes for climate change.

The Trilogy speculates a system of education that has undergone terrible transformations wherein the kids with superior 'brains' are 'bid' into top institutions, the rival EduCompounds, where prolific scientific experiments to manipulate nature's system are done. In *Oryx and Crake*, Crake is snatched up at a high price' (Atwood 203) by the Watson Crick Institute, which is one of the coveted EduCompound.

Jimmy thinks, “It was like going to Harvard had been, back before it got drowned” (203).

The ‘mid -range’ students like Jimmy, who had a high word score but could only average in the numbers columns, are reluctantly collected by inferior institutions teaching arts and humanities that are “pleasant to contemplate in its way, but no longer central to anything...” (219). The fall of arts and aesthetics is significantly focused upon in the Trilogy. It is interesting to note that the students with the slightest concern about the declining natural world and the role human beings play in it are all somehow relegated to the ‘inferior’ academies with no funds or scholarship schemes. The Martha Graham Academy, into which Jimmy was selected, was mainly filled with students from the pleeblands who call themselves artists and possess great contempt for the Compounds people. Jimmy’s artist acquaintances speak endlessly about how humankind has brought about destruction to the planet. In an argument that reflects the ruminations on the concepts of Anthropocentrism and the Anthropocene, Jimmy listens to them:

According to them it had been game over once agriculture was invented, six or seven thousand years ago. After that, the human experiment was doomed, first to gigantism due to a maxed-out food supply, and then to extinction, once all the available nutrients had been hoovered up... Human society, they claimed, was a sort of monster, its main products being corpses and rubble. It never learned, it made the same cretinous mistakes over and over, trading short term gain for long term pain... Soon..., there would be nothing left but a series of long subterranean tubes covering the surface of the planet. The air and light inside them would be artificial, the ozone and oxygen layers of Planet Earth having been totally destroyed. (285)

Such thoughts and ethical questions however, occur only among the artists and students of humanities who have no way of making a productive change given their lack of funds and social protection. The people who could actually make a change lived in the Science Edu Compounds with their luxurious lifestyle and ample research opportunities. However, all the research conducted there were designed to take humanity -only humanity- beyond climate change and as an extension, make man nearly immortal and god- like. Jimmy, on seeing saucer sized butterflies in Crake's institution asks, " ...did they occur in nature or were they created by the hand of man?"( 235).

Jimmy's visit to Watson Crick Institute is like a ride for the reader through all the machinations of the corporate community in making a fake world for the future. Every department in the Edu Compound vie to bring forth new inventions either to maintain comfort in the Compounds or to make new artificial food commodities as natural food resources are no longer available or to bring about novel and horrifying bio engineering feats to make the billionaires immortal and young forever. Crake keeps on calling each of these "Wave of the future"(240) to a Jimmy who is horrified at the number of nature's barriers crossed. At the section of BioDefences where he is introduced to a new splice called 'wolvogs' - a combination of wolves and pit bulls, he asks about the possibility of them escaping the Compounds and breeding. To this Crake replies "Nature is to zoos as God is to churches... Those walls and bars are there for a reason...not to keep us out but to keep them in. Mankind needs barriers in both cases" (242).

Anthropocentrism is depicted as the driving force moulding education and, in extension, the ultimate aim of the society. This notion is further shown to be abetting the doom of humankind. Crake's ideologies, verging on the insane, give him the

conviction that wiping off humankind will make the world a better place. He creates the Crakers as beings devoid of the human characteristics of lust for power, selfishness, and sexual jealousy.

In the post apocalypse world, which is a *tabula rasa* especially for the Craker kids, education is depicted as a catalyst aiding rejuvenation and interspecies cooperation. The narrative anchors upon the significance of the right kind of education for the new world. As the aspect of the significance of education in countering climate change will be dealt with in detail in the forthcoming chapter, this will not be further deliberated here.

### **3.9 Conclusion**

The chapter focused on, through the analysis of the primary texts, the connections made in literature between the abstract socio-cultural backgrounds, influences and impacts upon the perception and comprehension of climate change. The repercussions of climate change as affecting and disrupting the established socio-cultural environments as delineated in the texts have also been studied here. The chapter proves how literature can turn the abstract aspects of climate change into related images and narratives that can be related to by the readers. The potency of literature to highlight the varied emotional attitudes and responses of varied people towards a threatening entity is underscored in the chapter. The study emphasises how literature can serve as a platform to explore the dynamics of forms of socio-cultural awareness, perceptions and responses towards overwhelming factors like climate change.

As climate change perception is deeply embedded in the socio-cultural fabric of societies, a thorough cultural transformation is needed to confront it. The socio-

cultural scenario created by the contemporary corporate and global consumerist age “pits us against the natural world” (Klein 61). The responsibility of literature and other forms of expression is to “offer other ways to live – to wage and win, a battle of cultural worldviews” (Klein 61).

The forthcoming chapter deals with the possible and necessary methods of socio-cultural and material transformations as delineated in the primary texts and goes on to establish how literature serves as a significant tool for cultural transformation through such depiction.

## **Chapter 4**

### **Aesthetics of Transformation and Regeneration**

#### **4.1 Introduction**

The analysis of the primary texts this far has focused on the aspects of depiction of climate change in literature in relation to overcoming the representational difficulties and the portrayal of the deep-set socio-cultural backdrop of the climate change discourse. Keeping this as the foundation, this chapter attempts to understand the ability of literature in influencing attitudes and knowledge towards climate change through the analysis of the varied solutions visualised by the three authors. The term solution, as used here, incorporates the lifestyle and attitudinal changes subscribed to in the primary texts along with the material and scientific solutions suggested.

The chapter states that all the three authors put forth a message of survival and repair thereby stressing on hope, biocentrism, sustainable life, acceptance of change, cooperativeness and epistemic and spiritual resilience as the foundational precepts for survival. The ultimate tool to combat climate change is deep ideological and cultural transformation.

The chapter also analyses the various patterns of solutions put forth in the primary texts and the feasibility of these solutions in the contemporary world. The study of the material and ideological solutions to and methods to combat climate change as depicted in the primary texts also serves to underline the inherent significance of literature as a powerful mode of dissemination of knowledge and transformational tool.

## 4.2 Aesthetics of Ideological Transformation

The investigation of the primary texts through the last two chapters proves that the foremost hurdles before the representation of climate change in literature and that also encumbers the effectiveness of climate action involves the massive scale and the complex political, social, cultural and ideological canvas upon which the discourse keeps evolving. Any action or dialogue on climate change from any angle or socio political perspective is potent enough to provoke equally strong and seemingly logical counter arguments. For instance, abstaining from the use of fossil fuels can be put forth as a solution to the climate crisis. However, in the present socio political and technological scene of the world, this seems to be a thoroughly debilitating and impossible path to take. Returning to the beginning of times to combat climate change is implausible. The possible path is that of sustainable living with a deliberate consideration for the ecosystem and an equally deliberate will to shed the inherent solipsism of being a human being.

All the primary texts are in agreement that the foundational issue of indecision upon the right climate action is anthropocentrism and that climate change is mainly anthropogenic. This section attempts to identify the ideological solutions/transformations suggested by the authors through their texts for the climate change issue.

Anthropocentrism, which involves regarding the human species as the most significant element of existence, especially as opposed to other plant and animal species, has been the norm of human life on earth for centuries now. The age of the Anthropocene, marked by the emergence of humankind as a domineering influence on the climate and environment, has also proceeded from this anthropocentric notion.



The giant and ambitious achievements of man in the fields of science, technology and innovation have taken the human world ahead in all respects and have enhanced the quality and ease of life. However, when analysed in the background of the current climate change scenario, this very anthropocentrism attains the maleficent status. All the primary texts analysed here agree upon the mainly anthropogenic nature of climate. However, this realisation gives rise to complex questions like

1. Can anthropocentrism be erased from the human psyche now?
2. If so, does that entail giving up all the socio-cultural scientific and technological systems developed till now?
3. Is it possible/desirable to return to the early man's hunter gatherer lifestyle?
4. Does that imply that human beings are to renounce civilized life and return to barbarism?
5. If at all such an impossible feat is made possible, how far can it help combat the current developments in the climate change scene?

All these questions, which arise as the inevitable result of the climate change debate in relation to human contribution to it, appear to be preposterous in the current stage of human history. It seems that delegitimizing anthropocentrism might not aid the climate change situation. Anthropocentrism is not just a state of mind as it is compounded by all the residual socio-cultural impressions that have emerged throughout human history.

According to Naomi Klein's *This Changes Everything: Capitalism vs The Climate*, "... we are products of our age and of a dominant ideological project... This has led our governments to stand helplessly for more than two decades as the climate crisis morphed from a "grandchildren problem to a banging-down-the door problem"

(460). This makes any attempt to rise to climate challenge as it is “part of a much broader battle of world-views, a process of rebuilding and reinventing the very idea of the collective, the communal, the commons, the civil and the civic...” (Klein 460). The most overwhelming part of the climate challenge according to Klein is that it requires breaking so many fundamental written and unwritten national and international laws, agreements and rules at once. All these rules have emerged from coherent world views and thought processes of which the centrality of the human species is an inevitable part. Therefore, once this world view is upended, the rules within it become weaker and vulnerable. Therefore, climate change activism must not merely aim to change laws and rules but should transform “patterns of thought” (Klein 461). Klein uses the history of major social movements around the world, especially the history of the anti-slavery movement to validate her point. All transformative movements of the past understood that the “process of shifting cultural values -though somewhat ephemeral and difficult to qualify- was central to their work” (Klein 462).

Even if there exists solid economic arguments for moving beyond fossil fuels, bringing them forth as the reasons for climate action might not produce results. Instead, a fundamental ideological transformation is necessary. Recounting the history of the abolitionist movement, Klein quotes the historian David Brion Davis, “The abolition of New World slavery depended in large measure on a major transformation in moral perception – on the emergence of writers, speakers, and reformers, beginning in the mid- eighteenth century, who were willing condemn (an) institution [slavery]...” (463). Similarly, Klein argues that climate change too requires an assertion upon the transforming of moral, ethical and ideological stances rather than large scale and random changes in laws, policies and national and international terms.

The subtle changes brought about in the perspectives of people reflected in minor lifestyle changes like changing to energy efficient transportation, shared transportation, conscious use of resources and conscious consumerism can bring about massive overall transformations.

Pope Francis's Encyclical, *Laudato Si: Care for Our Common Home*, subscribes to the notion of committing to small conscious changes rather than to large scale changes in laws and policies. The Pope expresses the significance of recognising the earth as the common home of all species, thus decentering the human species further. The idea of ideological transformation put forth by Klein and Pope Francis corresponds to the views put forth in the primary texts. This analysis of the primary texts with respect to the solutions of climate change ends at the need for foundational transformations in the ideological, moral and ethical framework of human beings as the fundamental solution to climate change.

The climate change process, both anthropogenic and natural, has commenced. Now, the solution is to accept the situation and work on regeneration, renewal and adoption of sustainable goals rather than distributing blame and accusing history. Anthropocentrism, industrialization, globalisation and capitalism have also occurred and have influenced the path of history. Now, the path forward is to appropriate them and move on in a different path. The guiding purpose here is “the very antithesis of extractivism” (Klein 442). Klein stresses upon recognising the difference between “an extractivist mindset ... and a regenerative one” (443). She remembers a conversation with Leanne Simpson, a Mississauga Nishnaabeg writer wherein the latter says that she prefers the meaning “continuous rebirth” (443) to be assigned to the term regeneration in this context. By this, Klein tries to establish that systems are predisposed to attain an inevitable stage when it can no longer be helpful to the

maintenance of peaceful order and a system of regeneration is bound to ensue. Thus, in the context of climate change, a regeneration and reformation in the ideological perception is necessary. She associates the idea with the indigenous world view of “seeing the world alive in the face of the bulldozers of colonialism and corporate globalisation” (443).

Adopting a transformed mindset and attempting to lead a non-extractive life does not mean that extraction has to be completely stopped because all living things must depend upon nature to survive. It means the “end of the extractivist mindset – of taking without caretaking, of treating land and people as resources to deplete rather than as complex entities with rights to a dignified existence based on renewal and regeneration” (447). Letting activities like logging and mining be controlled by natives of the land where the process is taking place and who are the most affected by it can bring about a control over the process. Reliance on resources that can be continuously regenerated, deriving food from farming methods that protect the fertility of the soil, harnessing energy from the ever renewable resources like the sun, wind and waves and recycling of metals from used sources are some of the methods suggested by Klein.

### **4.3 Aesthetics of and Regeneration**

The aesthetics of repair, regeneration and survival is a common thread that runs through all the primary texts and is especially strong in the works of Atwood and Kingsolver. The Trilogy upholds the message of hope, rejuvenation and restoration in spite of the general dystopian background. The apocalypse, though traumatic, paves way for the formation of a new world based on interspecies co-operation and environmental consciousness and which is devoid of several characteristics that

contributed to the degeneration of the previous world. Similarly, the texts by Kingsolver end on a note of hope and ideological transformation. For instance, Dellarobia anticipates a new and more conscious life after the flood. Willa emerges into a new life of readiness to give up on material possessions and an awareness of the natural world. The *Prodigal Summer* looks at the hopeful revival of the coyote population and the restoration of forest cover.

All the hopeful endings are brought about by various transformative processes on the psychological and material spheres of the characters. The following subsections discuss the different aspects of the transformations hinted at by the authors.

#### **4.3.1 Regeneration through Spirituality**

The role of spirituality and faith in the formation of perceptions about climate change has been heavily hinted at in the primary texts, specifically the Trilogy and the works by Kingsolver. This study identifies two different aspects of faith and religion being represented in the Trilogy. The use of religion and faith as a manipulative tool to evoke attitudes of denial and false hope in people and to create a pro corporate stance has been discussed in Chapter 3. This section discusses a different role of faith, spirituality and religion in the climate change discourse. The Trilogy postulates that faith being a manipulative tool can be used to create a pro environmental attitude and lifestyle in the people. As this aspect is dealt with in detail in the second book of the Trilogy, *The Year of the Flood*, which elaborates the convictions of the God's Gardeners, this section focuses entirely on that book in the analysis.

Adam One and Zeb adopting spirituality as a tool in promoting their eco-religious community called 'God's Gardeners' in the book is a typical representation

of the manipulative and transformative capacity of faith and religion. The group is created by brothers Adam One and Zeb, who have had a traumatic past under the influence of their father, The Rev, who maintained the Church of PetrOleum as a medium to control the perspectives and actions of its followers. The brothers, escaping their father's unscrupulous and unethical practices and religious teachings that subscribed to the exploitation of nature, forms the God's Gardeners community on the lines of a religious cult dedicated to respecting and nourishing the environment and in preparing for an inevitable apocalyptic event. Here, it can be understood that the brothers recognise religion and faith as powerful manipulative tools and they use it in the same manner as their father did but for the opposite purpose.

It is significant that religion and faith are used distinctly as manipulative and controlling tools for specific purposes. In *The Year of the Flood*, Adam One tells Toby that having the cover of a religious sect is a protective measure as it insulates them from the interference of the private policing force, CorpsSeCorps. Adam One believes that religious groups are "off limits" (Atwood 58) for the CorpsSeCorps. Religion as an institution holds some power that keeps them safe from the administration and policing forces. God's Gardeners keep the religious mantle as a pragmatic measure to keep safe from external interferences. As Adam One says, "It would be bad for their [CorpSeCorps] to eviscerate anything with God's in its name" (58).

Faith, on the other hand, is used as a measure to ingrain habits and attitudes in the followers to make them attain an unshakeable sense of the environment. For instance, Toby finds it very difficult to forgo her veggie wows and her promise not to hurt her fellow creatures even when faced with extreme hunger and life threatening situations. The strict lifestyle rules and ritualistic practices followed by the Gardeners

are intended at the creation of a mindset that ascertains the belief in the coexistence of all life forms and the perception of nature as a source of sustenance rather than as a ground for extraction. When Toby is uncertain about her worth of becoming an Eve, Adam One says, “In some religions, faith precedes action...In Ours, action precedes faith. You have been acting as if you believe, dear Toby. *As if* – those two words are very important to us. Continue to live according to them, and belief will follow in time” (201).

The formation of a mindset devoid of selfish materialistic pursuits thus forms the core of the rituals and practices of the cult. It can be seen that religion and faith have been used as pragmatic tools rather than as philosophical concepts by them. Atwood identifies the flaws of religion and faith and even the people who propagate and follow it. For instance, she speaks about the waywardness of the cult members through Burt who manages to grow illegal plants in the Garden in allegiance with the CorsSeCorps. Adam One, attempting to ease Toby’s skeptical mind says, “We should not expect too much from faith...human understanding is fallible, and we see through a glass, darkly. Any religion is a shadow of God. But the shadows of God are not God” (201).

Toby’s initial reaction to being with the God’s Gardeners is to cry with relief and gratitude. She feels as if a “large benevolent hand had reached down and picked her up, and was holding her safe” (52). The terrace to which the Gardeners take her has been transformed to some sort of garden with plants and flowers that also attracts bees and butterflies. This is in stark contrast to the world outside, which the Gardeners call the “Exfernal world”, which is devoid of any remnant of nature or creatures other than humans. The difference in the natural surroundings experienced at the Gardener's

terrace, as opposed to what Toby had been exposed to for years itself makes her breakdown with relief.

Faith and the habits instilled in her through the rituals of the Gardners help Toby sustain herself after the apocalypse. Moreover, her training as a God's Gardener gives her the courage and resources to save Ren and Amanda. In the case of Pilar, another Gardener from whom Toby learns beekeeping and the value of being in communion with other creatures accepts disease and death peacefully as she believes that she is donating herself to the "matrix of life through her own volition" (214).

The gardeners believe that a massive destruction of the human race, which they call the Waterless Flood, due to "overpopulation and wickedness" (56) was impending. They prepare themselves to survive the flood and continue the human race, in a better way. For this, they stash away nonperishable food and other things in hidden store places they call "Ararats". "Thus they would survive to replenish the earth. Or something like that" (56).

Adam One, often comically, reinterprets biblical myths in ecological terms. However, the humour is lost as the God's Gardeners take the new found myth and their way of life quite seriously. The myths and rituals of the God's Gardeners help them to sustain themselves and keep hope in the face of the horrible dystopian world. They fuse science and religion in their eco theology.

Atwood does not intend to blindly place faith and religion as ways to redemption. She hints at how environment conscious practices when followed as a ritual, become unbreakable habits and thus contribute incrementally to the overall well-being of nature and human beings. The transformation perceptible in Toby's choices and priorities after joining the Gardeners is a typical representation. Toby,



though sceptical of the practices and beliefs of the Gardeners, tries to fit it as it is her only means of survival. Though she finds the theology and beliefs ridiculous and shallow, she finds happiness and contentment in the job that she comes to choose – caring for animals. Even though being in communion with insects and animals is something alien to her, that is the only job in which she finds herself capable. This brings about massive transformations in her attitude towards the environment and she realises the significance of other species.

Thus, it can be concluded that the Trilogy, especially *The Year of the Flood*, brings forth that faith, spirituality and the ritualistic practices and beliefs surrounding them, when used deliberately with an ecological consciousness can bring about a deeper understanding of the environment. This, in turn, can help attain what Hannes Bergthaller calls the ‘ecological imperative’, that is humans acknowledging that “that they are part of nature and behave accordingly” (731). For the God’s Gardeners, faith can bring about change in the inherent value system of people. The Trilogy places faith as an evidence of human ability to prioritise ethics and goodness even in a world teemed with immorality and violence. The narrative sees hope in the repetitive practice of care and benevolence. This can be seen as a positive step towards survival and regeneration.

#### **4.3.2 Regeneration through Knowledge**

Having the right kind of knowledge and understanding has been represented as effective pathways towards a transformed mindset which in turn, leads to revival and regeneration. In Kingsolver’s *Flight Behavior* for instance, Dellariobia is equally hopeful and anxious at her son Preston’s desire for knowledge about nature.

With all his might Preston wanted to be a scientist and study animals...Dellarobia felt an entirely new form of panic as she watched her son love nature so expectantly, wondering if he might be racing toward a future like some complicated sand castle that was crumbling under the tide. She didn't know how scientists bore such knowledge. (Kingsolver 247)

As Dellarobia, through her recent acquaintance with Ovid and the scientist students, begins to gain more knowledge about the vulnerability of the earth, she realises that she has no one to share her dread. Her best friend, Dovey, though intelligent, does not stand distressing conversations as “her methods of self- preservation were fierce” (247). Her husband is “protected in his own way” (247) by his blissful ignorance about everything beyond the boundaries of his estate and religious community. Thus, Dellarobia finds that lack of knowledge is the principal hurdle that stands in the way of the formation of an environment conscious mindset and climate action. Willa, in *Unsheltered* enters a new phase of life by gaining knowledge about the natural world around her. Her conversation with Tig makes her recognise that the financial difficulties that she is going through in her life is nothing comparable to the level of sufferings going on around the world due to the vulnerable natural system. She comes to a greater realisation that giving up on some material possessions, that are completely unnecessary for a life of peace and reasonable comfort, can actually reduce her financial burdens and in turn alleviate the earth of a bit of junk. Such a transformation in the mindset which is imperative for the regeneration of the environment is represented to be brought about by knowledge.

Atwood takes a different and deeper discourse on the aspect of knowledge as a must for regeneration. Atwood represents the transmission of the right kind of knowledge as crucial for the creation of a transformed mindset. The pre apocalyptic

world presented in the Trilogy presents a bleak world which survives upon technology and unethical bio engineering practices. The socio economic and cultural system built upon the notions of anthropocentrism, materialism and extractivism is on the verge of annihilation spewing violence, exploitation and general moral deterioration in its wake. The conceptions about education are based on pragmatism and material need. The relevance of arts and humanities in the maintenance of moral and ethical environments has become redundant. The implications of a climate altered world upon the system of education and vice versa has been discussed earlier in the previous chapter in section 3.9. The next section discusses how the Trilogy enforces the significance of the arts and humanities, especially the role of storytelling in the formation of ideologies as seen in the Trilogy.

### **4.3.3 Regeneration through Storytelling**

The post-apocalyptic world of the Trilogy dismisses art and the humanities as useless subjects and relegates them to the inferior and unfunded universities where the supposedly low caliber students learn. In *Oryx and Crake*, Crake, while designing the humanoids, dismisses art as a useless faculty and tries to eliminate artistic tendencies in the Crakers. He is wary of arts:

Watch out for art, Crake used to say. As soon as [the Crakers] start doing art, we're in trouble. Symbolic thinking of any kind would signal downfall, in Crake's view. Next they'd be inventing idols, and funerals, and grave goods, and the afterlife, and sin, and Linear B, and kings, and then slavery and war.  
(Atwood 361)

This conception of Crake forms the gist of the ideology kept by humans at large in the pre apocalyptic dystopian society. However, in the post-apocalyptic world, the

Crakers dismantle Crake's assumptions and plans through their deep interest in stories and their desire to build a mythology for themselves. The Crakers, with their inherent desire for more knowledge and their curiosity about their origins, subvert Crake's plan to create a monologic, indifferent and mechanical community devoid of symbolic and diverse thoughts and perceptions. The curious nature of the Crakers is presented through their unending, pestering questions to Jimmy/ Snowman and Toby. Each time the Crakers present Snowman with his ritualistic fish, they demand a bit of a story about their origins. "Snowman, tell us please about the deeds of Crake." A story is what they want, in exchange for every slaughtered fish... "What part would you like to hear tonight?"...They are fond of repetition" (Atwood 117-118).

The Crakers weave a mythology about themselves from the bits of stories told by Jimmy and Toby. They need the stories to make some sense of their own existence. They form conceptions about their origins, ethical and moralistic ideologies and ritualistic practices from these fables. In the first book it can be seen that the stories about the past and about Crake and Oryx are being fabricated by Jimmy upon a whim. However, as the storytelling progresses, he finds that the Crakers take them too seriously that they build a mythology of their own establishing Crake and Oryx as their unseen creator and sustainer respectively thus deifying them. This is a direct subversion of what Crake had actually intended. As Jimmy tells them how Crake "did the Great Rearrangement and made the Great Emptiness. He cleared away the dirt, he cleared room..." (119), the Crakers immediately surmise that the God like Crake cleared a chaotic past for their birth and begin to chant in his praise. They call themselves the "Children" (119) of Oryx and Crake and it begins to take the form of a liturgy. In the first book, it is significant that the stories are told by Jimmy, who represents the blind anthropocentrism of the humankind that he had lived among.

His stories do not indulge the values of nurturing and benevolence. The Crakers imbibe his stories and create a mythology for themselves unwittingly enshrining Oryx and Crake, two humans as their deities and centre their ideologies and rituals upon their supposed thoughts and wishes.

In the second book, *The Year of the Flood*, Toby meets the Crakers and takes up the story telling. With her God's Gardener value base, Toby infuses the concepts of kindness and benevolence into the stories. In the third book, *Maddaddam*, the storytelling gets intense and gains direction in comparison with the rambling and whimsical tales told by Jimmy. Toby's stories about the creation of the Craker tribe and the post apocalyptic world are clearer, kinder and more logical than that of Jimmy's. Herein, the narrative unveils how the Crakers, following the stories, attain a sense of themselves and of the world around them. However, here too the conception of the centrality of the human species tends to continue in spite of being weakened. Towards the end of the book, Blackbeard, the Craker child attains the knowledge of the letters and takes up the role of the story teller. It is significant that Blackbird's stories abandon all traces of anthropocentrism and hint heavily at interspecies cooperation and hope.

In the second last chapter of *Maddaddam* entitled "The Book", Blackbeard registers how Toby, before her death, taught him to write down the happenings that go around him thereby initiating the formation of a new post anthropocentric history through words and stories. The final chapter "The Story of Toby" ends with a note of hope wherein Blackbeard writes about how the new world is thriving,

Then Swift Fox told us that she was pregnant again and soon there would be another baby. And the fourfathers were Abraham Lincoln and Napoleon and

Picasso and me, Blackbeard; and I am very happy to have been chosen for that mating. And Swift Fox said if it was a girl baby it would be named Toby. And that is a thing of hope. (Atwood 474)

Therefore, it can be concluded that apart from being used as a narrative tool, Atwood introduces stories and storytelling as a means of creating and transforming ideologies, worldviews and ethical concerns. The stories rendered by different people with different ethical and moral backgrounds can create different impacts upon the perceptions of a listener. The mind of the Crakers being a clear state upon which impressions etch deeply, stories told by Jimmy and Toby create deep impact. Finally, as Blackbeard gathers knowledge of language and the written word, he attains the faculty of storytelling. However, his stories adopt a different path once he comes across the skeletons of Oryx and Crake, whom the Crakers had considered deities till then. The fact that both Oryx and Crake were mere mortals and did not possess any divine creative powers makes him shed his adulation for those human figures and this symbolises the dissolution of anthropocentrism. From then on, the stories are set down by Blackbeard who also takes up the responsibility of teaching language and writing to the new generation. In this manner Atwood presents how stories, imagination and arts can aid in creating and nourishing a new environmentally responsible mindset.

#### **4.3.4 Regeneration through Sustainability**

The need to set an environmentally sustainable life and choices can be understood as the inherent message of the primary texts. Kingsolver makes a direct presentation of the need for adopting a sustainable lifestyle based on conscious consumerism, minimalism and responsible consumption of nonrenewable resources.

Kingsolver does not attempt to list out solutions to tackle climate change in any of the texts. As the issue is not something that can be completely eliminated or easily slowed down, giving clear cut solutions in a fictional text does not seem to be practical. However, the author does circuitously suggest some lifestyle changes and adjustments that can be adopted so as to slow down the climate change process.

*Prodigal Summer* sports extensive references to the Amish lifestyle in which people adopt a way of life that avoids technology and environmentally harmful products as far as possible. They produce their own food and even practise barter system whenever possible. The children are brought up as environmentally responsible individuals. The lengthy description of Amish stalls of homemade materials and farm grown products free from the use of pesticides seem to have been deliberately made to make the reader dwell upon the possibility of adopting at least some aspects of the Amish culture.

In *Flight Behavior*, Leighton Atkinson's suggestions enlisted in his 'Sustainability Pledge', though inoperable for a person with Dellarobia's financial background, can be perceived as a proposition to the readers. Converting to electrical vehicles and investing in environmentally conscious stocks are methods that can be adopted by fairly affluent sections of the society.

In *Unsheltered* Tig's lifestyle is used as a replicable example to follow. Through Tig's words, Kingsolver puts forward the call for minimal use of resources, reuse and recycle the minimalist lifestyle and the great scope of sharing and loving. Moreover, her decision not to give birth and to adopt her brother's son comes out as a strong message and reminder that overpopulation is one of the greatest hurdles in tackling climate change. Tig's influence on Willa makes her see life in a new light.

She is able to let go of material things more easily than earlier. While moving from her house to a minimal apartment Willa brings herself to share or donate most of the stuff in her cupboards which are emotionally significant but useless. Thus, towards the end of the narrative Willa, like her counterpart in the past, Thatcher Greenwood, realises that if the world goes on to be ignorant and reluctant to learn, we might one day stand “unsheltered in the daylight” (417).

Kingsolver makes clear the idea that the life of man which aims at gaining more than his/her own parents and the desire that one’s children should have more than they themselves had should come to a definite end. The primary concern in the minds of the people is to keep the cupboards full. Only on accomplishing that they are ready to fear the planet being used up.

However, the author does not press upon the adoption of lifestyles mentioned in the novels. They are just placed as suggestions that can be taken up by serious readers of the novels. The author’s focus is on creation of awareness and expressing the various manners in which climate change is perceived rather than on preaching solutions. In all the novels the author’s intention to engage some hearts and minds to make a difference is obvious.

Practical steps to survive the warming like resorting to underwater farming, relocating human population from vulnerable areas and extensive use of alternate energy resources are strongly suggested in *The Warming* by Robinson. The narrative places strong criticism at the folly of spending dear money on infrastructure that might not be able to hold the rising sea for long. Jon, while presenting his controversial article to an audience says,



For the last 50 years the public has been sold sea walls as the answer to protecting endangered cities. Literally trillions have been spent... on seawalls and other forms of mitigation. And we continue to build them, or rebuild them as the sea rises, despite the fact that, in most cases, they don't work... But, all evidence to the contrary, governments still build, rebuild or expand sea walls. And people tend to believe in them. (167)

The author, through Jon's voice, urges to confront starvation which can be considered the most serious outcome of climate change. The imagined future world shows how starvation has started to affect even the developed countries as the cost of food is skyrocketing due to insufficient supply. Food riots are commonplace and outright war over resources is on the horizon. The predictions of billions dying due to starvation and malnutrition which were once considered inane fear mongering have begun to be taken seriously. To tackle such a situation, the narrative suggests underwater farming which Jon accepts would provide only a small part of the answer to the big problem. Still, he says, "But answers to complex problems often result from dogged pursuit of incremental improvements" (169). The author implies that instead of using the advanced technology for useless constructions, it can be used for something crucial. "The technology is all in place. All that's needed is incentive. And I think the warming provides humankind with the strongest possible reason to return to the sea: *survival*" (170).

He also roots for lifestyle changes like minimalism and own food production. The life of the Amish community and that of Mennonite Church is quoted as outstanding examples while pointing out some present organisational flaws in their structure. In the year 2038, Kent Whitaker is seen reporting from an Amish settlement

in Pennsylvania in the chapter “Tis Gift to be Simple”. By that time, the world has been affected so much by the climate change phenomena that “increasing numbers of people are opting -perhaps of necessity – to live substantially simple lives” (224). Through a conversation with the leader of the group, their lifestyle is revealed as characterised by reduced dependence on technology, making clothes, growing and preparing food together even within extended families. The author suggests that emulating the simple lifestyle of such communities at least partly would increase the chance of survival, at least of the human race. Kent Whitaker says, “The Amish... are known for their simple, family centred living, plain dress and reluctance to adopt many conveniences of modern technology. And many Mennonites, who often refer to themselves as plain people, also live very simply” (224).

Apart from referring to these two communities that actually exist, he also presents another replicable form of life in the chapter ‘Harmony’. Here, the members of the community are all who possess the monetary capacity to actually buy their entry into such a community with strict restrictions for admission. They are all people who used to lead a comfortable life and are at Harmony mostly by choice.

However, even though both authors have been eloquent about the lifestyle of such communities, moving over to a life of simplicity presents itself as a problematic concept as the vast majority of the people living in developing countries find motivation in life mainly in their aspiration for the consumption capacity enjoyed by the rich and the population of the developed countries. To lecture minimalism to a world where the lion’s share of the population sets their aim at possessing more stuff and to lead an easier life would seem unfair.

It can be argued that the primary texts effectively propose the idea that the transformed mindset which is the foundational imperative to realise any level of climate action can stem from incremental steps taken by each individual. Any minor change in lifestyle deliberately made towards climate action can contribute to large - scale action around the world. This corresponds to the messages put forth by Pope Francis in *Laudato Si* and also by activists like Naomi Klein.

#### **4.3.5 Regeneration through Hope**

The analysis of all the primary texts boils down to the recognition that climate action is primarily the adoption of a readiness to transform the socio-cultural and ideological mindscape upon which the human community had depended upon till now. However, this transformation can only be sustained with the firm foundation of hope. Hope for a better and safer future can be seen as the fundamental thread of all the texts.

Climate fiction, given its dystopian settings and distressing scenes, often have been condemned for hopelessness and evoking despair in the readers. However, it can be observed that all the primary texts hold on to hope and stresses upon the immense regenerative capacity of nature.

Atwood herself has refused to call her fiction dystopian stating that both utopian and dystopian works have elements of both overlapping. Therefore, Atwood calls her fiction 'ustopian' as she presents bleak worlds and ends with a note of hope. Atwood, in spite of the bleakness presented in her fictional future, does not however give up everything to utter tragedy. She cherishes a ray of optimism in her narration and almost always tries to emerge out of distressing situations with some solutions. In the Trilogy, it can be found that the plot goes through uncanny paths only to reach a

point where the survivors converge and plan for a better, environmentally conscious and more benevolent future. They learn from their mistakes and become the harbingers of the new world. Bertrand Russell in his 1933 essay “Man versus Insects” states, “We are accustomed to being the Lords of Creation; we no longer have occasion, like the caveman, to fear lions and tigers, mammoths and wild boars. Except against each other, we feel ourselves safe” (Russell 14).

Atwood confronts this human notion of Godliness and brings out futuristic visions of how this notion can take us to worlds of destruction, culpability and fear. However, the scenes of destruction and anxiety give way to a purgation enabling the survivors to envision a future wherein the malignant elements of the past world have been consciously eliminated. It can be noted that the word ‘hope’ itself is used repeatedly towards the last part of the third book, *Maddaddam*: “And Ren said, Tomorrow is another day...And Lotis Blue said it was a thing of hope...Then Swift Fox told us that she was pregnant again...And this was a thing of hope” (Atwood 474). The trilogy ends with a number of circumstances which give the impression that the future is about to be more hopeful. This culmination gives the reader the impression that climate change is not a completely hopeless state of things and that if a regeneration is imaginable even when the world has undergone such irretrievable destruction, a bit of effort can help manage the situation now.

All the novels by Kingsolver too carry hopeful endings. The message of regeneration represented in *Flight Behavior* has already been discussed in Chapter 1. Similarly, the final chapter of *Prodigal Summer* is presented from the perspective of a female coyote in search of her pair. The confidence and ease seen in the movement of the female and the prospect of finding a partner points at the hope that the coyote

population, whose extinction is a prime concern in the novel, is all set to thrive in the forests. This hopeful ending gives the reader the perspective that regeneration is possible in nature at any point. If left to pursue its way, nature can always find ways for connection and rejuvenation. *Unsheltered* too has a strong narrative of hope wherein Willa, in spite of all her troubles emerges into a new awareness and decides upon leading a new life. In the other timeline, Thatcher too comes out of the shackles of conventions free to follow his exploration of nature.

The narrative in *The Warming* also holds on to hope as Jon comes across powerful people supporting his ideas and sets up a new field for experimentation and innovations to combat climate change. Thus, it can be said that the narrative of hope is foundational in all the primary texts and they propose that having hope and the readiness to undergo a transformed life can be a definite start towards tackling the consequences of climate change.

#### **4.4 The Relevance and Restraint of Techno Fixes**

Human dependence on technology to tackle all challenges has contributed massively to the climate denial story. Most people hold on to the belief that any climate situation can be managed by superior technology. However, in the case of climate change, technological advancement might not be of great help when it comes to massive ecological disaster, lack of potable water and poverty. However, blind dependence on technology to scale the massive consequences of climate change can only be perceived as yet another variation of human centrism and supremestie attitude. This section discusses how the primary texts deal with the aspect of technology as a solution to climate change.

The Trilogy presents a futuristic world which is completely dependent on technology for survival. Here, technology goes beyond all bounds making life more convenient and verges on making the human being unconquerable and immortal thus making him all mighty – Almighty. In *Oryx and Crake*, Jimmy's reminiscences on the snatches of conversations by the people at his father's "Compound", Organ Inc, "create- an- animal was so much fun, said the guys doing it; it made you feel like God" (Atwood 57) gives clear cut vision into the dangerous future of bio capitalism that Atwood extrapolates. The world in the memory of Jimmy, Ren and Toby is alien to the present human perception of the world. The new world is barely concerned about the environment for it has already endured the ravages of climate change. The anxiety about the rising sea level, soaring temperatures, drowning landmasses, droughts, floods, hurricanes, species extinction and wars over resources has given way to an altered way of the world solely based on technology and anthropocentrism.

The Compounds wherein lives the elite of the society is solely composed of people who have superior technological skills - scientists, doctors and engineers who keep on spewing new innovations making human life more comfortable. The Compounds are insulated communities thriving solely on unethical and inhuman technology. Research to prevent ageing and even death of human beings are among the primary projects in action in the Compounds. Species extinction has reached such a level that lions, wolves and birds are alien to Jimmy's generation. However, there is no sense of loss as technology has advanced so much that new animals called "splices" can be created at will by the scientists. Apart from this, almost all features with regard to life in the Compounds reveal some monstrous face of technological innovation. The line between technology and normal life has blurred so much that natural and technological are no longer identifiable. For instance, on seeing the saucer

sized butterflies in Crake's college campus Jimmy asks whether it was natural or made by the "hand of man" (Atwood 235). Jimmy's tour of Crake's college campus gives the reader an impression on the technocratic world that Atwood's manifests in the imaginary future. Detailed study of Atwood's conception of technology has been done in the Chapter 3, further analysis will not be done here.

The Trilogy explores how the human tendency to bank upon technology as the ultimate solution to climate change can backfire or even create a monstrous dystopian future. It is to be noted that the God's Gardeners, who form a radical ecological community, do not use technology in any form. Mobile phones or laptops are considered evil objects. However, they have stored laptops and some other necessary technological gadgets in hidden places for emergencies. This suggests that technology itself is not to be considered as an evil concept that leads to disastrous consequences. It is the mindset of the people who find technology as the ultimate solution to environmental problems that create the damage. Human made technology is incapable of providing the final solution to the issue of climate change. The solution lies in the incremental changes made in lifestyle and thought processes wherein logical use of technology can be of assistance.

Robinson portrays yet another aspect of technology in relation to the climate change scenario. He does not condemn the use of technology to combat climate change but tries to stress upon the thoughtful use of technology. The narrative suggests that practical solutions like underwater farming and floating residences can be realised with the help of technology. Here too the issue lies in the processes of thought and stringent attitudes of people. When Jon suggests that people living in the

endangered coastlines should be relocated to safer places and the coasts should be used for underwater farming, he is faced with severe criticism based upon the emotional attachment of people to their traditional living spaces. The issue here is attitudinal rather than practical.

Moreover, the text suggests that the use of the technology can also be more prescient and logical. For instance, spending billions on sea walls when it is known that rising sea levels will definitely pull them down seems foolish and wasteful technology. Instead, that money can be redirected to more innovative technological ideas that can counter poverty and lack of resources. As previous sections have discussed Robinson's conceptions about the use of technology as a solution for climate change, this section would skip deeper analysis.

Thus, it can be concluded that, both Atwood and Robinson put forth the message that technology can never be a substitute for a transformed mindset. Blind dependence upon technology is only a reflection of the inherent human centrism and the attribution of superiority upon the human species. Technology can be of real assistance in the maintenance of systems but can never combat the unprecedented impacts of climate change. Ultimate answer to climate change is possible only through deeper socio-cultural and ideological transformations and not through human centric technological solutions.

#### **4.5 World as the Common Home**

The most significant outcome of attaining a post anthropocentric mindset is the acknowledgement that the world is the common home for all species. Pope Francis expresses his concern over the loss of biodiversity due to "short-sighted approaches to economy, commerce and production" (27). When nature is seen only as



potential resources to be exploited and the loss of plant and animal species is seen as collateral damage, “a vicious circle results, as human intervention to resolve a problem further aggravates the situation” (28) Technological advances and consumer goods which are expected to substitute for the loss of biodiversity can only cover the loss only for a limited period. The Pope says, “we seem to think that we can substitute an irreplaceable and irretrievable beauty with something that we have created ourselves” (28). All the primary texts attempt to demonstrate that interspecies respect and acknowledgement of the rights of other species over the earth is vital for survival and regeneration at this point.

The end of the Trilogy anchors upon a new world wherein no species is seen as the centre of the creation and each one depends upon another species for survival. The final battle against the painballers symbolise a desirable synergy of the species to confront ecological deterioration. The Painballers can be seen as representing the ruthless materialistic and solipsistic world that led to the apocalypse and the new found cooperation among the surviving humans, Crackers and the pigeons can be seen as the ineluctable path of redemption. The narrative after the battle in *Maddaddam* exhibits an organic incorporation of all the species. Toby tells Blackbird, “I am writing the story... The story of you, and me, and the Pigeons, and everyone. I am writing about how we put Snowman-the-Jimmy and Adam One into the ground, and Oates too, so that Oryx can change them into the form of a tree” (Atwood 456). Herein can be deciphered the enveloping of all species - plant, animal and even the humanoids into discourse for the future.

The novels of Kingsolver are all anchored upon the aspect of interspecies respect. As in depth exploration of Kingsolver’s novels in relation to interspecies respect has been already done in the Chapter 2 (2.5.2), detailed analysis will not be

done here. However, it can be conjectured that Kingsolver roots for the importance of discerning the earth as the common home of all species. *Prodigal Summer* ends with a chapter from the point of view of a female coyote tracking the scent of a male coyote that seems to have arrived recently in the area. Placing the narrative from the point of view of an animal is strategic in stressing the significance of interspecies respect in the climate altered world. Similarly, *Flight Behavior* focuses on the monarch butterfly and elaborates on the impact of the loss of one particular species on the planet. *The Warming* too touches upon the subject of depletion marine species and the bleaching of coral reefs and their consequential impacts upon the earth.

Thus, attaining the preparedness to accept the world as the common space for all beings, human and nonhuman is a primary requirement for a climate change solution.

#### **4.6 Conclusion**

The chapter postulates that the fundamental step towards combating climate change and effectively facing its consequences lies in transforming the socio-cultural and ideological conceptions of human beings. Large scale amendments in national and international policies and laws are both impossible and unpragmatic. As all the long held policies and laws originated from the basic assumption of the superiority of human beings and the belief in his ability to tackle all kinds of problems, dismantling that conception will be the most realistic step.

All the primary texts agree upon the point that a transformed mindset is the basic imperative for dealing with climate change. The study corresponds to the views put forward by Naomi Klein and Pope Francis in their respective works. As the Pope says, “An integral ecology includes taking time to recover a serene harmony with

creation, reflecting on our lifestyle and our ideals...” (128). He proposes that leading a life of “serene attentiveness” (128), following the example of Jesus, can give human beings a “way to overcome that unhealthy anxiety which makes us superficial, aggressive and compulsive consumers” (128).

A change in ideological world view is critical in defining the response to the climate crisis. Klein warns that if humanity continues to stay on the same road, the result will be “the big corporate, big military, big engineering responses to climate change – the world of a tiny group of big corporate winners and armies of locked-out losers that we have imagined in every fictional account of our dystopian future...” (59). Herein lies the recognition that climate change, if not addressed in the right manner, will produce a highly undesirable future. The only way to stop the world burgeoning to such a future is to take the first step towards ideological and lifestyle transformations.

Klein states that “the greatest barrier to humanity rising to meet the climate crisis is not that it is too late or we don’t know what to do...” (459). It is because real action “involves unlearning the core tenets of stifling free -market ideology that governed every stage of their [humans] rise to power (460). Abandoning this ideology of human centeredness should be the key to climate action. The primary texts put forth this concept and also presents paths of transformation through faith, hope, knowledge and its right usage, adopting a consciously sustainable lifestyle, imagination and creativity. All these can be understood as formative tools that aid the ideological formation of people helping them to adopt habits and incremental lifestyle changes.

Such transformations might not bring about a sweeping change. However, they can be credible and incremental steps towards the building of a strong mechanism of resistance and regeneration. Because, as Klein proposes, “Culture, after all, is fluid. It has changed many times before and can change again” (59).

## **Chapter 5**

### **Conclusion**

#### **5.1 Introduction**

So far, this research work has investigated three core aspects of climate change discourse in literature. The study dealt with how the primary texts, through the use of various narrative strategies, maneuvered the representational hurdles in depicting climate change in literature. The next core chapter probed into the deep entrenchment of climate change in the socio-cultural fabric and the final core chapter discussed the material and ideological solutions posed by the primary texts and the foundational need for ideological transformation as the first step towards climate action. This chapter intends to provide the quintessence of the core chapters in separate sections and to conclude the investigation by tracing the interconnection of the core chapters and establishing the research problem.

#### **5.2 Representing Climate Change in the Specific**

The investigation of the primary texts reveal that most of them have resorted to represent specific aspects of climate change rather than trying to encompass all the complex and multifaceted aspects. For instance, the Trilogy focuses upon climate change with relation to its socio-cultural consequences for the future. Atwood has attempted a philosophical approach through which she delineates the complexities that emanate from anthropocentrism, technocracy and the associated social systems and its implications upon nature. Though, it can be argued that Atwood has touched upon several aspects of climate change, she has done justice to her venture by giving it logical form and continuity.

Kingsolver prefers to focus on a limited geographical area, preferably her native Appalachian, and probe deep into the ecological grid of the area. Kingsolver's novels deal with the interconnectedness of everything in nature and how nature revives and sustains itself in the absence of human interference. The significance given to non-human species and the impact of climate change upon them is also a conspicuous feature of her narrative. Situating the narrative in a particular geographical area and probing the climate change scenario of that limited space gives focus to the narrative. For the time scale, Kingsolver deters from attempting to encompass the fairly long context of climate change and focuses on a particular time period, mostly the present time. Her strategy is to anchor on a particular time and probe deep into the various manifestations of climate change in that time.

Lorin R Robinson, on the other hand, attempts to bring in multitudinous aspects of climate change into the plotline resulting in loss of focus and narrative intensity. The experimental method adopted by the author in order to encompass the vast spatial and temporal scale of climate change has proved successful in some respects. For instance, the time of action covers a long period of 2021 to 2051 and this helps the reader to speculate a chronological advancement of the results of the climate change phenomenon. He has also tried to cover an immensely large geographical space thus underlining the transnational nature of the issue as against the localised pictures provided by most other writers of climate fiction.

However, the narrative method has its own inherent flaws. The storylines of Jon and Kent Whitaker seem to be forcefully tied together to make the narrative seem one instead of several. All the climate broadcasts hosted by Kent find connection to the main story only due to the fact that Kent gets married to Jon's daughter towards the end of the narrative. Even when this contrived union stands, several chapters stand

apart from the main narrative tethered loosely by the climate change theme. The chapters 'Exodus', 'The Perfect Storm', 'Francesca and Paulo', 'Smiley's People' and 'Deepest and Darkest' stand so well apart from the novel's central theme that they might as well have been individual short stories dealing with climate change.

The narrative successes of Atwood and Kingsolver and the flaws identified in that of Robinson, strengthens the conception that though climate change is an immense theme, the authors ought to select a specific theme or a limited number of thematic strands rather than attempt to encompass the whole of it. This proves that complete perception of climate change is not tenable in fiction. It can be identified that depiction of a hyper object like climate change can be effectively done circuitously through the presentation of its effects like landslides and floods as seen in *Flight Behavior* and earthquakes and droughts as seen in *The Warming*. It is advisable that the author shall focus on a particular aspect or some aspects rather than trying to wrap the whole into a text.

### **5.3 Consensus on the Socio Cultural Background**

The study proves that all the primary texts are in consensus that the issue of climate change exists in a deep and complex context influencing and being influenced by the long held socio-cultural conditioning of humankind. A legion of factors depend upon the maintenance of the current perspectives, attitude and lifestyle which has been moulded by the strong and foundational concept of the superiority and capability of the human race. The phenomenon of climate change can be understood as a collateral damage that emanated from this world view. However, as the issue has now evolved into an irrepressible threat to the survival of the current state of nature, the rectification also is bound to come from the socio-cultural setting.

The primary texts dwell upon the aspects of politics, faith, religion and the system of education as the primary systems that lead to the formation of socio-cultural, ideological, moral and ethical perspectives. The discourses of depletion of resources, climate change denial, climate apartheid, terrorism and the issue of unequal distribution of consequences are found to stem from the perspectives constructed by such systems.

This realisation leads to the further thought that effective climate action can take place only with the essential transformation from the primarily anthropocentric, materialistic and extractivist mindset to one that acknowledges a biocentric and environmentally conscious life. The impossibility of a sudden ideological transformation is obvious as it involves the deconstruction of several complex systems, relationships and national and international laws and policies that have been constructed over the course of centuries. This can be understood as an explanation to the relative non fulfillment of the goals of sustainability, economy of resource and the alternative resource usage put forth by all national and international agencies and authorities.

During the COP 27 Summit in Egypt in November 2022, Antonio Guterres was quoted saying, “Humanity has a choice: corporate or perish. It is either a Climate Solidarity Pact or Collective Suicide Pact”. He prompted the world leaders gathered to form a “historic pact between developed and developing countries to combine capacities and to pivot the world towards reducing carbon emissions, transforming energy systems and avoiding a climate catastrophe” (Reuters). It is significant that Mr. Guterres’s remarks occurred at a time when the world is distracted by Russia-Ukraine war, rampant consumer inflation and energy shortages. The myopic, ego and greed boosted events like war, excessive consumerism and plunder of resources at a



time when the earth is at a tipping point, verging on climate induced disasters, is a pointer at the imprudent and unenlightened attitude of the anthropocentric world. Therefore, if the goals stated by Guetteres have to come to fruition, foundational transformations must occur, not in the policies and laws of governance, but in the mindset of people.

#### **5.4 The Ecological Imperative**

The primary texts, through different paths, come to the conclusion that the ultimate route to effective climate action is ideological transformation which has become imperative. While Atwood takes a deep ecological approach suggesting that foundational and drastic changes in ideological stances are needed for maintaining the stability of nature, Kingsolver and Robinson opts for more liberal but firm transformations. Even Atwood, amidst the deep ecological narrative attempts to put forth the feasibility of radical changes through small, possible steps made by each individual. The ultimate message that can be derived from the reading of the primary texts is that the materialistic, consumerist and extractivist culture that dominates the contemporary world should necessarily be abandoned or be avoided on an incremental basis for a safer and harmonious earth.

Climate change itself is a process that has evolved in a gradual manner revealing itself through minor to major ecological changes. It can be noted that the major difficulty in the representation of climate change in fiction emerged from its complex placement in the development of history and the massive and diverse nature of its manifestations. The analysis of the primary texts have revealed that each text looks at climate change from a particular perspective with a limited number of thematic strands being explored. As an extension of this thought, it can also be

imagined that effective climate action can also be made by focusing upon a particular perspective that is plausible for the individual or community concerned. The primary texts hint upon grassroot level action as more potent than bringing about sweeping legislations. A person voluntarily choosing to lead a life of minimalism can be more effective than an imposing rule forcing people to resort to alternative energy sources or bringing about lifestyle changes. Faith has been perceived as one of the effective channels that assist the formation of conscious lifestyle as it helps in endorsing regular habits and effecting periodical acts of abstinence. Such acts help in creating the emotional and intellectual stamina that can lead to the formation of an environmentally conscious mindset.

If the present generation of people start with small transformations in lifestyle and in turn, transformations in mindset, the now young generation will have a strong ground to bring about massive socio-political changes and also to mould policies, relationships, and legislations that assist the maintenance of environmental balance and harmony.

### **5.5 The Role of Literature**

The role of stories and storytelling in the creation of world views and patterns of thought as seen in the primary texts has also been investigated in the study. Just as storytelling can be a strong tool for ideological formation, literature can also be a tenable tool enabling the transformative mid set imperative for climate action. The essence of the themes explored in the primary texts is potent enough to create awareness and thereby help the readers effect an ideological transformation. Art and literature can help people imagine how each choice made makes an impact upon the environment. Art can help climate research reach the people. Each environmental

conscious action taken inspired by a work of fiction can be a contribution to the momentum of climate action. As the ending note of *Prodigal Summer* hints, “Every quiet step is thunder to beetle life underfoot, a tug of impalpable thread on the web pulling mate to mate and predator to prey, a beginning or an end. Every choice is a world made new for the chosen” (Kingsolver 447). Literature, like faith, politics or culture, can be a strong manipulative tool bringing about patterns of thought that gradually gain in strength and ultimately form a massive movement in tackling climate change.

## **5.6 Conclusion**

The thesis proposes to state that climate change as a subject ought to be approached in segments both in narration and in action. The narrative scheme and the thematic approach of the primary texts enforce this perception. The essence of the critical analysis of the primary texts puts forth the message that climate change, anthropogenic or not, is to be confronted to ensure the survival of the human and nonhuman species. An effective ideological transformation towards responsible consumerism, interspecies respect, readiness to adopt alternative, renewable resources, reduction of energy consumption and resource wastage and the acknowledgement of responsibility to support people and countries unfairly suffering from climate consequences require large scale transformations in the socio political and cultural fabric of the world as a whole. To attain this, contribution from all quarters – science, literature, arts, governments, administrations, diplomatic arenas, corporate sections, health care and primarily, the individual human being, is essential. Adding the elements of hope, optimism and a sense of oneness with the planet and fellow beings will catalyze the movement. The incremental and hopeful transformations made in everyday life can help create a renewed mindset in the

current young generation conditioning their priorities and ambitions towards an environmentally conscious world. Thus, small steps from many directions focused towards the same goal can create a new, livable world for the future.

## Chapter 6

### Recommendations for Further Research

During the process of the research, the researcher came across a number of aspects of climate change discourse that had the potential to be developed into individual research projects.

- **All the core chapters can be developed into separate theses.**

The first core chapter that deals with narrativity and the representation of climate change in literature can be considered as a topic for a separate Ph.D. thesis. For instance, the strategies adopted by authors of climate change literature to scale the issue of the massive space and time scale of climate change can itself be a rich objective for further research.

- **Relevance of hopefulness and optimism in climate discourses.**

The element of hope in climate change narratives can be considered for further research making use of the theories of hope and positive psychology. The stress upon hope as against the domineering discourses of dystopian futures, distress and catastrophes can be seen as an ambitious area of research.

- **Narrative strategies to represent the time and space of climate change.**

The massiveness of the time and space occupied by the climate change phenomena vouches for the possibility of different research strands in the area. Apart from the study of the narrative strategies adopted to lodge the aspect of time and space of climate change, other research areas related to space and time can also be explored.

- **Climate Change and Women**

The role of women on combating climate change has been a prominent topic for discussion even in the United Nations Framework Convention on Climate Change. Literature, especially those of authors like Margaret Atwood and Barbara Kingsolver. Even though several research works on eco feminism in the Trilogy have been produced, works that focus exactly on the unique potential of women to tackle or confront climate change, especially in issues of survival and subsistence. Barabara Kingsolver's fiction too can be studied for the representation of women as more capable, due to inherent knowledge of vulnerability, in perceiving and dealing with the climate change literature.

- **Mythology and climate change in the fiction of Margaret Atwood and Barbara Kingsolver**

Allusions to mythical stories to delineate the climate change situations and the role of the human species can be traced in the works of Margaret Atwood and Barbara Kingsolver. Further research can be developed upon the topic.

- **Speculative Fiction as a narrative mode to represent climate change.**

As Margaret Atwood has declared that her works come under the genre of speculative fiction and not science fiction or fantasy, it will be worthwhile to attempt a study on the feasibility and relevance of using speculative fiction in narrating climate change.

- **Concepts of place and space in climate change literature.**

As authors like Barbara Kingsolver are perceived to focus on a particular place and dwell upon the dimensions of climate change in that place, the study of place or locality in the depiction of climate change can be adopted by an aspiring researcher. Similarly, the concept of space can also be explored in relation to climate change narratives.

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