AN EXPLICATION OF ANTHROPOGENIC CLIMATE CHANGE IN ANURADHA ROY’S AN ATLAS OF IMPOSSIBLE LONGING

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ABSTRACT

Objective: Climate change is an alarming concept prevailing as a threat to human existence. The paper aims to emphasise on climate change, a concern for environment portrayed in Anuradha Roy’s novel An Atlas of Impossible Longing (2008). Extending this hypothesis, the paper aims to scrutinize the changes happening in the climate and environment in the novel during the partition period in India.

Method: The researchers have used qualitative research and to bring this research with a descriptive approach. However, the researcher lays out the study under the main theory of ecocriticism and narrows it down to the specific concept of ‘Climate change’.

Result: The novel An Atlas of Impossible Longing (2008) is set on the outskirts of West Bengal, which is located in the northern part of India. A widower character in the novel is finding it difficult to get attached to his motherless daughter who is quite close to an orphan boy named Mukunda, adopted by the family. The characters in the novel live in tune with nature and find certain difficulties to continue their lifestyle because of climate change.

Conclusion: In the explication on the concept of ‘climate change’ the researcher examines the relevant concepts like anthropocentric and anthropogenic which might be the cause of climate change. The main scope of this paper is to prioritize the concept of climate change for sustaining nature.

Keywords: Climate Change, Anthropocentrism, Ecology and Ecocriticism.

UMA EXPLICAÇÃO DAS MUDANÇAS CLIMÁTICAS ANTROPOGÊNICAS EM UM ATLAS DE DESEJO IMPOSSÍVEL DE ANURADHA ROY

RESUMO

Objetivo: As alterações climáticas são um conceito alarmante que prevalece como uma ameaça à existência humana. O artigo visa enfatizar as mudanças climáticas, preocupação com o meio ambiente retratada no romance de Anuradha Roy, Um Atlas da Saudade Impossível (2008). Ampliando esta hipótese, o artigo pretende escrutinar as mudanças que acontecem no clima e no ambiente no romance durante o período de partição na Índia.

Método: Os pesquisadores têm utilizado pesquisa qualitativa e para trazer esta pesquisa com uma abordagem descritiva. No entanto, o pesquisador apresenta o estudo sob a teoria principal da ecocriticidade e o restringe ao conceito específico de "mudança climática".

Resultado: O romance Um Atlas da Saudade Impossível (2008) está situado nos arredores de Bengala Ocidental, que está localizado na parte norte da Índia. Um personagem viúvo no romance está encontrando dificuldade em se apegar a sua filha sem mãe, que é muito próxima de um menino órfão chamado Mukunda, adotado pela família. Os personagens do romance vivem em sintonia com a natureza e encontram certas dificuldades para continuar seu estilo de vida por causa das mudanças climáticas.

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**Conclusão:** Na explicação sobre o conceito de "mudança climática", o pesquisador examina os conceitos relevantes como antropocêntrico e antropogênico, que podem ser a causa das mudanças climáticas. O principal escopo deste documento é priorizar o conceito de mudanças climáticas para sustentar a natureza.

**Palavras-chave:** Mudanças Climáticas, Antropocentrismo, Ecologia E Ecocritica.

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### 1 INTRODUCTION

Anuradha Roy is a modern writer in the field of contemporary Indian Literature. She is a journalist, editor and novelist. She has written 5 novels in her career they are *The Earthspinner*(2021), *All the Lives We Never Lived* (2018), *Sleeping on Jupiter* (2015), *The Folded Earth* (2011) and *An Atlas of Impossible Longing* (2008). These novels make a tremendous contribution to the field of Indian literature in relation with ecocriticism, post-colonization and ecofeminism. Roy’s way of describing Indian culture, environment and political scenario gives a deep background of Indian history. “It studies the anthropocentric discursive construction of the contrast of human and nature by western culture and Roy’s reflection of the anthropocentric attitude introduced by colonialism and practiced by Indians” (Dinç, 2021). Likewise, describing Indian environmental surroundings is inevitable in her novels which is apparently seen in the novel *An Atlas of Impossible Longing* (2008).

Ecocriticism is an emerging interdisciplinary field in the literary domain that deliberately brings out the ecological concern in a literary piece. This primary theory ‘Ecocriticism’ has been used in this research to prioritize the concept of ‘Anthropogenic Climate Change’. Eventually, this interdisciplinary field contains many subgenres like blue humanities, Plant humanities, climate studies, animal studies, veterinary humanities and environmental refugees.

The objective of the paper is to bring awareness among the readers about climate change, an emerging disaster that was reflected in Anuradha Roy’s novel *An Atlas of Impossible Longing* (2008) and also to focus on the main concept of the role of climate change and how to sustain nature.

Anuradha Roy’s *An Atlas of Impossible Longing* (2008) has been widely read under the concepts of ecofeminism, ecocriticism and post-colonization etc. Lydia Saleh Rofail postulates “This chapter explores how postcolonial Indian women’s writing reconfigures traditionally held Romantic notion of the Gothic and moves towards a unique Indian Postcolonial Gothic perspective” (Korkut-Nayki, 2012). Derya Biderci Dinç analyses the novel from a postcolonial ecocritical perspective stating

> The subordination of nature in western culture has become the root of all human dominance; it has been extended to include dominance of different kinds of race, ethnicity, gender, religion and class (Dinç, 2021).

Priyanka Chanda in her research paper inspected the concepts of ecofeminism which could be reflected in the novel *An Atlas of Impossible Longing* (2008).

This paper seeks to outline the lineage of ecofeminism in India in terms of both activism and fiction that explicitly foreground women. It marks a case to be built for women writers, and why they are important for the field of literature and environment in an age of accelerated and globalized technological development (Chanda, 2014).
In the research article “The Trauma of Dislocation: Portrayal of Migration and Memory in Anuradha Roy’s An Atlas of Impossible Longing” the researchers examine the concept of migration which is encapsulated with memory, trauma, etc. This is reflected in Anuradha Roy’s novel An Atlas of Impossible Longing (2008). The research paper brings out the problem of trauma because of dislocation from the characters, especially women characters in the novel (Dalal, 2023). Simon Kisku and Ranjit Kumar’s research article addresses the suffering and pain of women under the concept of patriarchy which was reflected in the novel An Atlas of Impossible Longing by Anuradha Roy (Kisku & Kumar, 2022). In the research article “Regenerative Strategies for Climate Justice” May East examines the new climate’s strong agriculture methods combined with traditional methods help in the means of food yielding plants and plants that are tolerant to drought that upgrade the productivity of plants and improve the nutrition of food (East, 2018).

2 THEORETICAL FRAMEWORK

2.1 Ecocriticism

Ecocriticism is a study that investigates the association of the environment with literature. It is a predominant theory in the field of literature. It’s nothing but exploring the correlation between nature and literature. According to, Cheryl Glotfelty

All ecological criticism shares the fundamental premise that human culture is connected to the physical world, affecting it and affected by it. Ecocriticism takes as its subject the interconnection between nature and culture, specifically the cultural artifact of language and literature. As a critical stance, it has one foot in literature and the other on land; as a theoretical discourse, it negotiates between the human and the nonhuman (Glotfelty, Fromm, & (Eds.), 1996).

The term Ecocriticism was coined by William Rueckert back in 1978 in his essay “Literature and Ecology: An Experiment in Ecocriticism”, Likewise J.W. Meeker calls as ‘literary ecology’. This theory helps the critics to investigate the author’s work of art from an ecological perspective. Certainly, Critics called this term as ‘Environmental Literary Criticism’.

Eco critics like Cheryl Glotfelty, who is the first professor of literature and environment in the US and other critics like Lawrence Buell, Henry David Thoreau, Eugene P. Odum, Joseph W. Meeker, Rachel Carson, Bruno Latour, Timothy Morton show the importance of studying the theory Ecocriticism through their works. These renowned writers are the reason behind the growth of ‘Eco fiction’. Consequently, many other authors also started showing their interest in environmental literary criticism. This literary theory has been used as a medium for these authors to talk about environmental degradation and industrialization which destroy the beauty of nature. “Currently, international organizations recognize environmental degradation as one of the greatest threats that hang over the planet and that threatens the existence of thousands of species, including humans” (Mamani, et al., 2023).

Environmental Study continued to evolve in modern sub-branches as ecocriticism developed, they are gyn/ecology, geopolitics, eco-spirituality, ecofeminism, ecoracism, eco-theology, neo-tiNai poetics and many others.
2.2 Climate Change

2.2.1 History of Climate Change

Tracing the history of climate change helps the readers to understand the features of climate change. “Scientists have been aware of human actions that contribute to climate change since 1896, when Swedish scientist Svante Arrhenius suggested that people burning fossil fuel were adding to global warming” (Juniper, 2019). Subsequently, the government took this matter seriously during the 1970s. Now climate change is at its uncontrollable peak where the scientists are trying to comprehend its aftermath. Nowadays this concept has been the inevitable talk in the field of environmental studies and literature because of the effects of threats it gives to this earth.

2.2.2 Traces of Climate Change on Earth

Climate change is a threat to the existence of all living organisms on earth, and is considered to be a serious talk in the world right now. It is important to develop awareness among mankind regarding the effects of Climate Change for a sustainable nature. “Climate change is a global and transboundary problem that necessitates intricate international cooperation” (Kumar & Dwivedi, 2023).

Global climate change is identified as a major threat to survival of natural ecosystems. Climate change is a dynamic, multifaceted system of alteration in environmental conditions that affect abiotic and biotic components of the world. It results in alteration in environmental condition such as heat waves, intensity of rainfall, CO$_2$ concentration and temperature that lead to rise in new pests, weeds and pathogens (Chaudhry & Sidhu, 2022).

On the scientific side, this is the actual process of climate change that is happening in the world. On the other hand, in the literature field, one among the ecocriticism sub-genres is climate change which is life-threatening annihilation that’s ruling the world. Climate change denotes the changes in the Earth’s climate, which is measured in the parameters of global, regional and local levels. This term is usually used to delineate the aspects of anthropogenic. Similarly, anthropogenic means human-induced pollution like contamination or poisoning the nature which brings changes in the environment. Likewise, climatology is also a kind of scientific study of Earth’s climate or weather conditions which is getting modified every day, but they have specific parameters to measure the changes. These kinds of studies bring awareness among people about the destruction that’s happening in the world. And some eco-critics bring out this awareness about climate change in their scientific books.

Because of the fundamental ways in which the human world depends in healthy natural systems, some of the most important political issues of our age are ecological ones. They include climate change, the effects of ecosystem damage, the disappearance of wildlife, and the depletion of resources, including fish stocks, freshwater, and soil. All these ecological changes have implications for people and are increasingly pressing (Juniper, 2019).

These above lines confirm that climate change is one of the most significant political and geographical issues of our age. “Global climate change is one example of environmental factors that will increasingly affect animal communities” (Juniper, 2019). Climate change has
been a threat to the existence of all living organisms. This concept has been adopted in this research to analyse the novel *An Atlas of Impossible Longing (2008)* by Anuradha Roy.

**3 METHODOLOGY**

Few researchers have widely explored the novel *An Atlas of Impossible Longing (2008)* under the concepts of post-colonization, ecofeminism, migration studies and trauma studies. And these researches have also clearly analysed the background set up of the novel, which was set during the partition time of India and investigated this under the concept of post-colonization. Similarly, under ecocriticism theory, the researcher aims to analyse the novel with the theory of ecofeminism. Evidently, no research has explored this novel under climate change studies. Consequently, the researcher plans to execute the climate change study to inspect the novel under the umbrella of green studies. This research has made an effort to warn the readers about the effects of climate change, which is prevailing as a big threat to human existence. This research has taken priority over the concept of Climate change to warn readers about the cause of this environmental catastrophe and encourage them to sustain nature.

The researchers have used qualitative research and to bring this research to the next level the research uses a descriptive approach. However, the researcher lays out the research under the main theory of ecocriticism and narrows it down to the specific concept of ‘Climate change’. The primary source of the research will be Anuradha Roy’s *An Atlas of Impossible Longing (2008)*. Similarly, the secondary sources have been drawn from various research articles, internet data and Eco critic theorist’s books. These are the sources from where the researcher collected the secondary data for this research.

**4 RESULTS AND DISCUSSION**

**4.1 The Plot In *An Atlas Of Impossible Longing (2008)***

Anuradha Roy is a contemporary author, who has contributed amazing works which celebrate the Indian culture, and environment in depth. And her novels are deeply drenched in female emancipation and nature conservation. The novel *An Atlas of Impossible Longing (2008)* has a wide range of interpretations of various concepts throughout the story. Many other researchers widely analyse this novel’s eco-feministic view during the partition period in India.

The story *An Atlas of Impossible Longing (2008)* is divided into two parts. Initially, it revolves around a widower named Kamal and his big family and how he tries to keep up the relationship with his daughter Bakul, which is set on the outskirts of Bengal. The other part of the story is about Mukunda who is an adopted child of the Kamal family, who is banished to Calcutta. Here the set shifts to the busy roads of Calcutta during the partition period. In this novel, there is a sound of environmental catastrophe which helps the researchers to commemorate the concept of climate change. The entire story is divided into three parts, they are ‘the drowned house’, ‘the ruined fort’ and ‘the water’s edge’. Eventually, these three divisions talk about the environmental destruction in one way or another which is caused by climate change. In terms of looking at the complexity of climate change in the novel.

We explore how the complexity of climate change as both scientific and cultural phenomenon demands a corresponding degree of complexity in fictional representation. For example, when author represent climate change as a global, networked, and controversial phenomenon, they move beyond simply employing the environment as a setting and begin to explore its impact on plot and character, producing unconventional narrative trajectories and innovations in characterization (Trexler & Johns-Putra, 2011).
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The researcher explains how the concept of climate change has been used in the literary field, especially in the novel part. This is how the metric was usually used to analysis the novel with the concept of climate change.

4.2 Effects Of Climate Change In The Novel

The effects of climate change have been strongly evident in the novel, indicating the destruction of people in the novel. Shanthi’s father Bikash Babu built their house near the river in Manoharpur. In the novel, the house is described as

…. his house was on high ground and he watched the progress of the river with amused complacency. Bikash Babu’s house, arcadian, picturesque in its seclusion as it faced the river alone, surrounded by fields of tender green rice-stalks, was the most vulnerable (Roy, 2008).

Bikash Babu might have built the house in the wrong place or he might have invaded the land of river. Consequently, he and the villagers notice that the water level of the river is increasing every year. The people around him warn him to go away from that house because of the increasing level of the river, but he refuses. They suggest him to go as an environmental refugee, “An environmental refugee is a person displaced due to environmental factors such as increased droughts, desertification, sea-level rise, and disruption of seasonal weather patterns” (R K & P, 2021). Here the flood is the major problem and Bikash Babu refuses to leave his house. When his daughter comes to his house during the pregnancy period, which is considered a tradition in India. Usually, in India, there is a tradition that a woman in her pregnancy period will be sent off to her parent’s house, especially for her first child. In order to receive good care during her pregnancy time and she would also feel comfortable in her birthplace. When Shanthi and her father were waiting for her baby, suddenly there is unpredictable bad weather that starts in Manoharpur. And that grows into a heavy rain which increases the river level of Manoharpur. At the same time Shanthi gets labour pain and nobody could get out of the house to get help for Shanthi and she dies in the labour pain. Bikash Babu loses everything he had in this flood, as the storm continues for several days. This incident clearly shows that the effects of climate change make human life miserable.

In most Indian cultures, people worship nature as God, in this situation the characters in the novel think that the river they thought of as God has been changed into a destroyer. “What a sad irony,” he intoned in English, “that the water that is our saviour is so easily turned into Destroyer” (Roy, 2008). These lines are said by Potol Babu to Bikash Babu about their lost hope. Everything that Bikash Babu owned was destroyed by the flood. His home was gone including his daughter because he was a bystander during the flood as he refused to acknowledge the danger and take precautionary steps. Consequently, the author could symbolically suggest that if we, the readers continue to be bystanders to climate change, maybe, we would also face the same fate as Bikash Bahu.

The river will make this house its own. What are these grand houses but arrogance? My grandfather would boast of the Italian marble. That marble will be the river’s bed now. Fish will swim in and out of our finest teak shelves and nibble our ivory figurines. Frogs will lay eggs in our English porcelain, water snakes will twine our pillars. The windows will fall off and flow down to the sea. My grandfather’s bust will stare into weeds, the ink from our papers will colour the water black, moss will ooze out of burst bedding, beds and chairs will float out like boats, the rooms will lie empty for fish to breed in them (Roy, 2008).
This lamentation is from the victims of climate change in the novel that affected the coastal part, which was explicitly portrayed in the novel. Along those lines, on the scientific side research has proved that “Coastal zones, the world’s most densely populated regions, are increasingly threatened by climate change stressors—rising and warming seas, intensifying storms and droughts, and acidifying oceans” (He & Silliman, 2019).

Similarly, there is another incident in the novel which is a natural disaster that happens in Songarh. Nirmal is an archaeologist who is doing his research in the fort ruins of Songarh. When Nirmal and Meera were in the ruined fort during his work suddenly there is an earthquake. No human died or got hurt, the fort also stands still during the earthquake. But still, it gave a shock and scary feeling to the characters in the novel. Everyone in the story was scared for their lives except Nirmal who enjoyed that scary feeling and he admired the earthquake.

Magnificent, don’t you think it was magnificent? The plates of the earth shifting, continents changing shape, mountain ranges rising, ocean migrating. Amazing it’s all hot liquid deep inside! Fire below the ocean (Roy, 2008).

These lines are uttered by Nirmal during the admiration of the Earthquake. If we view it from an environmental background, earthquakes are natural disasters that have the capacity to create disasters in the earth and destroy human life and the natural environment of the earth. WHO defines earthquakes as:

Earth can strike suddenly and without warning. An earthquake is a violent and abrupt shaking of the ground, caused by movement between tectonic plates along a fault line in the earth’s crust. Earthquakes can result in the ground shaking, soil liquefaction, landslides, fissures, avalanches, fires and tsunamis (World Health Organization, 2019).

The Pan American Health Organization (PAHO) statistic says that,

Worldwide, more than one million earthquakes occur each year, or an average of two a minute. A major earthquake in an urban area is one of the worst natural disasters that can occur. During the last four decades (1970-2017), earthquakes have been responsible for over a million deaths around the world in Armenia, China, Ecuador, Guatemala, Haiti, Iran, India, Indonesia, Japan, Mexico, Peru, and Turkey (Pan American Health Organization, 2023).

From the above data, we might know that earthquakes are a serious issue that has to be taken measures. This ecological catastrophe made by human’s impact on the earth. The author felt a responsibility to spread awareness to the world through her novels. And one such among them is An Atlas of Impossible Longing (2008).

4.3 Nature And Humans As A Victim Of Climate Change

The above two incidents are shreds of evidence for the ecological catastrophe. Consequently, this ecological catastrophe will accidentally destroy nature, where nature also falls a victim. This is evident in this novel during the first environmental disaster. “I just wanted to grow the U.P. Dusseri in my little Bengali garden. The trees looked healthy enough until the river drowned the far end of the garden” (Roy, 2008). These lines were addressed by Bikash Babu to Ashwin Mullick about how the mango trees were destroyed by the river. It is apparently visible that nature also becomes a victim of climate change. “Global warming, climate change, and industrial pollution could result in an increase in the frequency, complexity, and intensity
of multifactorial stress combinations impacting plants, soil, and microbial communities” (Zandalinas, Fritschi, & Mittler, 2021). In this world, where ever this ecological catastrophe happens nature will be the first thing that will get affected by the natural disaster and then human beings and other things fall into it.

In the same way, human beings are also affected the most by climate change. In the novel the character Kanabala who is the wife of Amulya was losing her mind from the start of the story it might be an impact of climate change. According to certain research climate change which induced global warming can be one of the causes of neurodegenerative diseases, “Among them, scientific works have been reporting an increased incidence of neurological diseases, encompassing also neurodegenerative one, such as dementia of Alzheimer’s type, Parkinson’s Disease, and Motor Neuro Diseases” (Bongioanni, et al., 2021). The research has proved that all these neurodegenerative diseases are caused by climate change. Likewise, certain research appeals that displacement from Calcutta to Songarh might be one impact of her mental illness “Her longing for her city, Calcutta, and the loneliness she feels in the present house make her traumatic and lead to an unknown mental illness” (Dalal, 2023). So, the author indirectly specifies the impact of climate change on the human species through these characters in the novel.

4.4 Elements Of Anthropogenic In The Novel

“Roy writes a story in which India and the Indian people share a common fate because of anthropocentrism” (Dinç, 2021). Anthropogenic activities have been seen in this novel in some scenes, which might be the cause of Anthropogenic climate change. “Anthropocentrism takes its roots from the idea that rational white western man is free to shape and exploit the non-human world” (Dinç, 2021). These activities have been indulged by characters in the novel. An anonymous man on the train explaining his experience in his work. “First I was in the timber trade, now I am in mica mining, you know mica?” (Roy, 2008). Both jobs are anthropogenic activities that are executed by human beings to the world. “The Anthropocentric view of human beings could be bounced back at human beings” (A & G, 2022). Similarly, in real life, the timber trade leads to deforestation and many forests have been destroyed. The impact of mica mining will be soil erosion which destroyed many places. Both these activities are the impact of human beings which directly or indirectly be the reason behind climate change. “Anthropogenic activities are responsible for modifying climatic regimes and land use” (Marques, et al., 2021). The author didn’t show the direct impact of these activities, but she indirectly tells the reader that humans are the reason behind this ecological catastrophe which is known as anthropogenic climate change. This domination over nature was interpreted in many ways through many theoretical concepts. Eventually, the concept of ecofeminism also talks about the domination of men over everything including nature and women.

Ecofeminism primarily renounces the patriarchal perspective where man is considered the epi-center and has complete dominion over every creation. This fallacious claim for the indubitable authority of patriarchy would have led to the domination of women and nature in this world (A & G, 2023).
CONCLUSION

From the beginning of the novel, the author Anuradha Roy didn’t forget to praise the beauty and the resources of nature. Moreover, she showcased the importance of living in harmony with nature through this work. All the characters in the novel enjoy their ecological environment and lived with it with their thoughts and souls. Though their physical bodies set them apart from nature, their souls and thoughts remain embedded with nature. We can see this in the novel when Mukunda comes to his old house and the garden and the trees help him to remember his past life.

I began to walk around the garden, bored by my thoughts, tired of waiting. I did not know much about plants and trees, but could see that it was now a beautiful garden, filled with the old fruit trees I recognised, fragrant bushes and creepers and many new saplings tied with stakes (Roy, 2008).

These lines were uttered by Mukunda when he had an acquaintance with his old house garden. The two children in the novel Bakul and Mukunda had more memories of nature. Similarly, nature played a vital role in everyone’s life. Even most of the character house has a garden and most of their time they spend with nature. These consequent scenes with nature show this novel as an eco-centric novel, where the author also talks about the androcentric activities of humans as a warning about climate change. And the main focus of this paper is to talk about the different impact of climate change which was unknown by the people. Many research has clearly mentioned that genetic variation or adaptation is also a main impact of climate change. “Climate change profoundly impacts ecosystems and their biota, resulting in range shift, novel interactions, food web alterations, changed intensities of host-parasite interactions, and extinctions” (Meester, Stoks, & Brans, 2018). These kinds of impacts were destroying the human species in a slow manner. Moreover, the novel talks about environmental degradation which is analysed in the above paragraph from an anthropocentric view. Eventually, the author Anuradha Roy glorifies the beauty of the Indian environment and also creates awareness about the ecological catastrophe.

She presents how western introduced anthropocentrism has been moved beyond the problem of separation of human beings and nature to articulate all kinds of exploitations and discriminations; the idea of dominance, stemming from anthropocentrism have negatively affected nature, women, and the poor and indigenous people and resulted in painful events (Dinç, 2021).

We can see keenly that Roy indirectly claims that human beings are behind the cause of changes in climate which results in painful events.

Rachel Carson in her essay “The Obligation to Endure” from Silent Spring (1962) warns the readers by saying ‘most part is irreversible’. “This pollution is for the most part irrecoverable; the chain of evil it initiates not only in the world that must support life but in living tissues is for the most part irreversible” (Carson, 1962). To sustain nature, we should reduce anthropogenic activities in the world by all means. On the whole, this research has concluded the point if we save the earth then we will be saved and we have a responsibility to save our environment.
REFERENCES


https://www.paho.org/en/topics/earthquakes


https://www.who.int/health-topics/earthquakes#tab=tab_1