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An AI-Powered Plan for Long-Term Mother and Child Health in a Polluted World

Hemlata[1], Dr. Ipshita Nath[2]

[1]PhD (JRF Scholar), Department of English, Manav Rachna International Institute of Research and Studies, Faridabad Haryana,
Email: *hemlatadalalkaswa[at]gmail.com*
Orcid Id - 0009-0007-5909-7272

[2]Associate Professor, Department of English, Manav Rachna International Institute of Research and Studies, Faridabad Haryana,
Email: *ipshitanath91[at]gmail.com*
Orcid Id -0009-0009-5394-9811

Abstract: ***There has been an uptick in the use of AI for sustainability efforts, but these systems still fail to account for the special dangers that climate change and environmental degradation pose to pregnant women and their children. In this study, we use a theme analysis that combines real-world policy frameworks with a careful reading of The Fifth Season by N.K. Jemisin to look at how AI-driven climate governance affects mothers' vulnerability. This study examines the parallels between the novel's depiction of environmental collapse, physiological trauma, and failing government and the real-life neglect of mothers, namely those who are marginalised by race, class, and location, using ecofeminist and intersectional lenses. Within the context of both science fiction and current artificial intelligence (AI) applications in fields such as healthcare, air quality monitoring, and disaster prediction, the study delves into themes such as systemic invisibility, reproductive justice, and resilience. The present AI-driven sustainability models have major shortcomings that these recurring themes show. These models frequently fail to take into account the real-life physical challenges faced by pregnant people and their carers. The results suggest that AI should be integrated into climate governance fairly and ethically, prioritising the improvement of maternal and child health and industrial and economic resilience. This work adds to the growing body of knowledge on reproductive health, environmental justice, and inclusive technology design by highlighting the importance of rethinking climate policy from the perspective of the most marginalised individuals.***

Keywords: Natural disasters, artificial intelligence, sustainable communities, environmental legislation, and the well-being of mothers and children

1. Introduction

We should expect more severe weather phenomena, elevated average temperatures, heightened environmental degradation, and systemic disruptions that disproportionately affect already vulnerable groups as the global climate crisis escalates. The insidious yet grave consequences of these environmental disasters, encompassing displacement, food scarcity, toxic exposure, and psychological distress, disproportionately impact pregnant women (Keenan et al). AI-driven climate policies often overlook or fail to acknowledge maternal vulnerability, despite increasing data linking climate change to adverse maternal health outcomes. The present application of AI in environmental governance reinforces systemic blind spots by emphasising economic efficiency and predictive modelling at the expense of equality and caring (Ukoba et al). AI systems inadequately address the experiences of pregnant women due to insufficient data pertaining to moms. This is particularly applicable to individuals whose identities are multifaceted and encompass factors such as geography, socioeconomic status, and ethnicity (Cirillo et al.)

This study elucidates a significant matter at the intersection of maternal health, environmental justice, and artificial intelligence. No context-sensitive, ethical, inclusive AI technologies exist that prioritise reproductive justice within climate governance (Keenan et al.) N.K. Jemisin's The Fifth Season articulates a persuasive critique of these shortcomings. It demonstrates how societal mechanisms designed to preserve order can annihilate the most vulnerable segments of society in a dystopian future characterised by ecological collapse, physical suffering, and state-sanctioned brutality. The accounts of Essun and other marginalised individuals illustrate the devaluation of parenting and survival by governmental institutions. This illustrates current trends in AI and climate policies that seek to obscure underprivileged communities (Ukoba et al). This study seeks to elucidate three issues: (1) the neglect of pregnant women's needs in AI-driven climate policies; (2) the deficiencies of current AI frameworks in tackling environmental injustice; and (3) the potential impact of speculative fiction on the development of more inclusive and equitable policymaking methodologies. It achieves this by employing both empirical policy analysis and theoretical constructs from intersectional literature. This intersectional approach integrates climate science, AI ethics, and maternal advocacy, contributing to the growing body of research on sustainable development and technological equity.

How Science Fiction Portrays Mother Survival in the Face of Environmental Devastation from a Feminist Perspective

The integration of ecofeminism into literary studies has led to the production of numerous works that investigate the interrelated processes of gendered oppression and environmental degradation. As a political and social movement, ecofeminism opposes patriarchal and capitalist structures in an effort to free women, mothers, and people of colour from environmental and social oppression. Because of its depiction of the deterioration of civilisation and the environment, ecofeminism has scrutinised literary works such as Parable of the Sower by Octavia Butler. Butler portrays a

dystopian future where ecological disaster leads to the breakdown of social systems, with the most vulnerable populations bearing the brunt of this disaster (Kouhestani, 2015). A revolutionary future that challenges patriarchal dominance over women and the environment is envisioned by Butler's Earthseed community, according to Shahnavaz (2017), who mentions ecofeminists like Vandana Shiva. Posthumanism, which challenges the concept of human uniqueness and highlights the interdependence of humans and their natural environments, is another theoretical framework that Mohammadi (2016) uses to situate Butler's writings. By dissecting The Fifth Season, a powerful work of modern fiction by N.K. Jemisin, this study adds to the growing corpus of ecofeminist writing that denounces environmental injustice. A mother's journey across a continent in the wake of a devastating earthquake is a metaphor for ecological collapse, racialised caste systems, and the disposability of mothers in Jemisin's work. While Butler's heroes face the harsh reality of a post-apocalyptic world, Jemisin's characters witness totalitarian governments weaponising natural systems and reproductive bodies. By focusing on Essun, a mother whose life is closely tied to environmental suffering and systemic control, the Fifth Season deftly shows that environmental degradation is never gender-neutral. This study argues that Jemisin formulates an ecofeminist stance by tying environmental degradation to race, forced migration, and contraception. There has to be a greater emphasis on intersectionality in both theoretical studies of literature and environmental policymaking in practice. This research adds to the growing body of literature that uses theorising on gendered survival and environmental justice in post-crisis societies as a framework for speculative fiction.

Rethinking climate policy through an intersectional lens

In the 1970s, as second-wave feminism began to address women's experiences, scholars of colour emerged to ask: Whose women's experiences were being acknowledged? In response to these assessments, theorists from the feminist and womanist traditions, including Moraga, Anzaldúa, and Crenshaw, developed the notion of intersectionality. They said that there was a bias in feminist thinking, favouring white middle-class women and ignoring women of colour and working-class women. Early ideas on layered or cumulative oppression attempted to chart out a linear progression of disadvantages, but they did not take into account the subtle interplay of multiple identities (including gender, race, and class). Instead of just a list of social disadvantages, black feminist thinkers like Collins, Mullings, and Crenshaw argued that intersectionality is a relational framework illuminating how privilege and power structures simultaneously and diversely operate in different social contexts. This perspective is crucial to understanding environmental injustice. Polluting air and water, hazardous exposures and displacement due to climate change disproportionately affect people who are already marginalised on numerous fronts, such as race, gender and economy. These oppressions may not have been directly labelled by early intersectional theory, but the ideas outlined make them very evident. For instance, Black and Indigenous women with low incomes are non-uniformly located in communities near roadways, industrial areas and landfills. Another problem is the lack of representation of these women in the bodies that write legislation on the environment. This is neither accidental nor coincidental. It is due to long-lasting racial segregation, sexism in the workplace, and economic inequality. Environmental research and policy should use an intersectional approach instead of relying on "one-size-fits-all" models to understand how social identity and structural power shape the core causes of climate change and environmental degradation (Chaplin et al). Our research demonstrates environmental injustice as an intersectional phenomenon, which highlights the need to rethink the use of AI and other technology breakthroughs in environmental policy. AI-driven climate models and risk assessments may reproduce the same mistakes that intersectional theory criticises, specifically, not taking into account the lived reality of pregnant women and other marginalised moms. These are the starting points for a just response to the climate calamity.

Ecofeminism and the Inefficacy of Policies in Jemisin's The Fifth Season

Through her compelling fictional lens, N.K. Jemisin explores environmental collapse, parenthood, resilience, and policy failure. The narrative depicts the impact of the system's collapse on disadvantaged groups, particularly mothers, in a world where climate disasters called the "Fifth Seasons" happen frequently. In a culture that controls and dreads those with seismic talents, sometimes called orogenes, the protagonist, Essun, is a woman whose child is killed. Her narrative exemplifies the resilience of mothers in the face of institutionalised oppression and natural disasters; it is a story of loss, survival, and the pressing desire to locate her child. Jemisin showed that Essun is a mother who faces tremendous environmental stress, social isolation, and state animosity, just like many women in today's climate-vulnerable locations. In this alternate reality, there would be huge voids in actual policymaking, particularly on health and climate adaptation. Climate solutions powered by AI frequently prioritise data optimisation and large-scale environmental management over the impacts of climate change on maternal well-being, healthcare access, and reproductive health (Ukoba et al). Policies in the actual world, similar to the repressive Fulcrum in the book, frequently disregard or reject society's most defenceless members, such as mothers navigating hazardous and contaminated situations. Season 5 examines patriarchal structures that take advantage of women's bodies and the environment via an ecofeminist lens. All mothers and women face institutional oppression; Essun's fight for necessities like food, housing, and healthcare is emblematic of this universal struggle. Politicians and people she knows are out to get her. The only way to achieve sustainability is to think about the challenges faced by people who are trying to save lives in times of crisis.

2. Methodology

AI-Powered Climate Health Programs and Season Five

This qualitative research study examines N.K. Jemisin's The Fifth Season explores the themes of environmental collapse, mother resilience, and societal failure. The reading of the novel here is as fiction that reflects the real ecological injustices and the systemic imbalances that result in underprivileged women bearing the brunt of ecological calamities. This study, through critical reading and interpretive analysis, investigates the representation of social and environmental system failures in the narrative. It

highlights how historical mistakes resonate with today's issues in policy implementation, especially in the spheres of climate change and maternal health. We are interested in how these representations illuminate the challenges of motherhood in precarious and unpredictable situations and so provide insight into the experiences of disadvantaged groups in the face of environmental pressures. The study also looks at the existing use of artificial intelligence in domains such as air quality monitoring, maternal health systems and disaster prediction, as well as reviewing the literature. It looks at how these technologies are being deployed to tackle climate change and public health, finding critical gaps in our knowledge on how to tackle socioeconomic inequality and maternal risk. This research will compare science fiction with contemporary technical paradigms to illuminate the frailties of AI-based governance. More specifically, it seeks to show how AI-driven policies fail to include inclusive and intersectional perspectives on sustainability and care. By engaging specialists from a variety of disciplines, we can achieve a more profound understanding of how literary works like The Fifth Season can serve as a theoretical basis for investigating real-world environmental and technological systems.

The Function of AI in Long-Term Sustainability: Challenges and Prospective Solutions for Disadvantaged Maternal Health

1) Analytics for the Prediction of Climate-Related Disasters

Those who are most oppressed are already those at the outskirts of society, notably those who live in the South of the world. By pooling together experts from various sectors, we can better comprehend how literary works such as The Fifth Season can serve as a theoretical foundation for analysing environmental and technological systems in the actual world. those areas where climate change will have the greatest effect. According to (Ukoba et al). The use of artificial intelligence (AI) in climate disaster prediction analytics has tremendously helped in the forecast of catastrophic weather occurrences and patterns of environmental disturbance. The technologies analyse enormous climate data sets and send out early warnings, so communities may better prepare for natural calamities such as floods, droughts and wildfires (Ukoba et al.) But there is a clear inequality in the deployment of these AI systems, with low-income regions that are more vulnerable because of a lack of a stable technological infrastructure often left out of the rollout. They are high-risk regions where mothers from low-income or minority groups, already at a disadvantage, prefer to gather. Without early warning systems or evacuation services, more people are displaced, hungry, and without healthcare after disasters (Keenan et al).

2) Ongoing Surveillance of Air Quality in Urban Environments

Individuals residing in poverty are disproportionately situated in congested industrial areas, hence elevating the risk of urban pollution. Individuals experiencing poverty are disproportionately situated in densely populated industrial areas, hence heightening the risk of urban pollution (Hajat et al). Artificial intelligence (AI) and the internet of things (IoT) may enable air quality monitoring systems to identify hazardous contaminants in real time and notify the public accordingly (Shukla et al). Notwithstanding these advancements, several low-income and minority areas still lack suitable or any sensor networks. Community-level issues encompass erratic data collection and activities that are either not initiated or left unfinished. Elevated exposure to pollutants during gestation among low-income mothers has been associated with low birth weight, preterm delivery, and developmental deficits in offspring. Indoor air pollution in low-income dwellings exacerbates health inequities, hence reinforcing ecological and reproductive injustice.

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3) Leveraging AI to Improve Access to Maternal Healthcare

Artificial Intelligence may mitigate enduring disparities in maternal health by improving remote treatment, optimising resource distribution, and detecting pregnancy-related issues. The current state of artificial intelligence systems is concerning, as they can mirror and occasionally exacerbate the biases in healthcare data. The outcomes for low-income groups, women of colour, and rural communities are distorted or inaccurate due to the predominant reliance on data that inadequately represent these demographics in algorithm training (Cirillo et al). Introducing AI-based healthcare solutions in many disadvantaged places is problematic due to digital divides, characterised by insufficient budgets, infrastructure, and education. Underprivileged women continue to confront challenges such as preventable maternal death, delays in medical interventions, and unacknowledged issues. In the absence of inclusive data regulations and equitable technology distribution, AI may exacerbate healthcare gaps rather than ameliorate them (Cirillo et al).

3. Discussion

This study combines ideas from N.K. Jemisin's The Fifth Season, with current applications of artificial intelligence in maternity and environmental health, aims to highlight the overlooked challenges faced by low-income mothers.

Literary Allusions to Real-Life Situations

According to Jemisin's research, mothers and children are at risk due to systematic neglect and environmental degradation. Artificial intelligence (AI) systems used for tasks like air quality monitoring, disaster prediction, and maternal care can fail to meet the needs of vulnerable groups. In every instance, we observe that policy-based or technology remedies are

insufficient to eradicate underlying socioeconomic inequality.

Drawbacks of Government Driven by AI

The efficacy of AI has been much lauded, but when it comes to policymaking, it may be lacking in openness and inclusivity. Inequality is exacerbated, not ameliorated, when AI systems are built using biased data or implemented without considering local circumstances (Cirillo et al). Whether in reality or fiction, safeguards do not reach the most vulnerable people in society.

Significant Disparities between the System and AI

In terms of inequality, AI has the potential to exacerbate or alleviate it. Without proper consideration, it will not include mothers from low-income or rural areas. When designed with equity in mind, AI has the potential to revolutionise healthcare by identifying health problems at an early stage and providing tailored support (Cirillo et al). Developing these technologies while keeping gender, class, and location in mind is absolutely crucial.

Sustainable Policies Regarding Maternal Health

Many sustainability plans disregard maternal health, although health and gender equality are included in the United Nations' Sustainable Development Goals. Motherhood is portrayed in Jemisin's story as a protective barrier against environmental catastrophe, and current policies should reflect this. The health of mothers and children should be one of the primary goals of sustainable development and ecological justice.

Integrity Concerns with AI Applications

Artificial intelligence systems frequently disregard ethical concerns such as data protection, informed consent, and equal access. Season 5 argues that current artificial intelligence should not regard humans as mere data points and makes a case against technology that dehumanises people. Fair treatment of low-income mothers, community participation, and transparency should guide AI ethics.

4. Policy Recommendations

The following equity-focused policy actions are proposed by this research to address the systemic neglect of maternal health in sustainability policies driven by AI:

1) **Improving Artificial Intelligence with a Focus on Maternal and Community Health**

Improving the health outcomes for mothers should be the primary goal of artificial intelligence applications in healthcare, urban planning, and climate resilience. The fundamental goal of any assessment should be to determine whether or not the tool can enhance the availability and quality of responsive maternal care, particularly for women from disadvantaged backgrounds. Improving the health outcomes for mothers should be the primary goal of artificial intelligence applications in healthcare, urban planning, and climate resilience. The fundamental goal of any assessment should be to determine whether or not the tool can enhance the availability and quality of responsive maternal care, particularly for women from disadvantaged backgrounds.

2) **Construct AI Governance Systems with Equity in Mind**

Particularly in fields such as environmental monitoring, disaster prediction, and maternity healthcare, governments and organisations ought to establish regulatory frameworks that necessitate the examination of artificial intelligence systems for bias (Cirillo et al). These models should make people more transparent, explainable, and accountable for their actions.

3) **Inter-Sectoral Collaboration**

Successful integration of maternal health into climate and artificial intelligence policies necessitates collaboration among public health officials, technologists, gender advocates, climate scientists, and community stakeholders. Collaborative efforts ensure that emerging technologies effectively tackle the genuine challenges faced by mothers.

4) **Maternal health must be integrated into climate resilience strategies.**

National and international initiatives to adapt to climate change must prioritise maternal health. In data modelling and emergency preparedness procedures, disaster and pollution prediction systems should highlight maternal health threats.

5) **Promote Data Collection and Secure Community Members' Consent**

It is imperative that women, especially those from marginalised communities, are actively engaged in data governance systems if we are to achieve data justice, which should be a top national priority. Preventing extractive AI techniques requires maintaining informed consent procedures and data standards that are sensitive to cultural norms.

6) **Advocate for and Develop AI Tools through the Use of Context**

Government and NGO investment in scalable, cost-effective AI systems can address local health and environmental challenges. An example is the prevalent and uniform implementation of AI-driven mobile health platforms in economically disadvantaged communities; these systems may encompass prenatal care and air quality notifications.

5. Conclusion

This study explores the intersections of climate change, artificial intelligence in governance, and maternal health through the lens of The Fifth Season, an engaging literary work. The research indicates that contemporary AI-driven sustainability initiatives frequently neglect the particular hazards faced by low-income moms, both in reality and in literature. Notwithstanding AI's achievements in areas such as maternity healthcare, air quality assessment, and catastrophe forecasting, significant systemic deficiencies persist, especially with the mitigation of gender, racial, and socioeconomic disparities (Ukoba et al). Jemisin's research highlights the actual policy blind spots, demonstrating that women are disproportionately impacted by environmental degradation. Utilising intersectional and ecofeminist frameworks, the study demonstrates that technology may have adverse effects when removed from its social context, exacerbating the inequalities it seeks to eliminate. This report calls for immediate action, emphasising the vital importance

of maternal health in discussions on sustainability and AI policy. The well-being of mothers is a fundamental element of resilient and equitable societies. To guarantee equitable distribution of AI, ethical design, participatory governance, and interdisciplinary collaboration are essential. Future research should explore the interrelations of public policy, literary criticism, and technological analysis. In a prejudiced and inequitable society, interdisciplinary methodologies are essential to reconceptualise AI as a means of caring and efficacy, rather than only an instrument of efficiency.

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