

**CLIMATE CHANGE AND WOMEN'S HEALTH: A
SOCIO-LEGAL STUDY WITH REFERENCE TO
GORAKHPUR DISTRICT OF UTTAR PRADESH**

ABSTRACT OF THESIS

**SUBMITTED TO THE
BABASAHEB BHIMRAO AMBEDKAR UNIVERSITY
LUCKNOW**



FOR AWARD OF THE DEGREE OF

Doctor of Philosophy

**SUBMITTED BY
SHIVPRIYA
ENROLLMENT NO.- 211/16**

UNDER THE CO-SUPERVISION OF:

**Dr. Rashida Ather
ASSOCIATE PROFESSOR**

UNDER THE SUPERVISION OF:

**Prof. (Dr.) Preeti Misra
PROFESSOR**

**DEPARTMENT OF HUMAN RIGHTS
SCHOOL OF LEGAL STUDIES
BABASAHEB BHIMRAO AMBEDKAR UNIVERSITY
(A CENTRAL UNIVERSITY)
VIDYA VIHAR, RAEBARELI ROAD
LUCKNOW-226025, (U.P), INDIA**

2023

ABSTRACT

1.1 INTRODUCTION

“Climate change affects us all, but it does not affect us all equally. The poorest and most vulnerable – those who have done the least to contribute to global warming – are bearing the brunt of the impact today.”

(UN Secretary General Ban Ki-Moon)¹

Climate change is increasingly recognized as a global crisis with significant human and gender dimensions, yet responses so far have focused more on scientific and economic solutions rather than these critical aspects.² Climate change refers to the more extreme and erratic weather patterns, rising sea levels, and events attributed to greenhouse gas emissions that have caused global warming.³ While often viewed as just a scientific issue, climate change also has profound social, economic, and political implications with impacts on social justice and gender equality.

International organizations like the UN and World Bank have coordinated urgent responses, mobilized funds, and set emissions targets.⁴ However, climate change has also caused tensions between developed countries like the US and rapidly developing countries like India and China, where rising per capita emissions

¹ Address to the High-Level Segment of the UN Climate Change Conference at Bali, *available at*: <https://www.un.org/sg/en/content/sg/speeches/2007-12-12/address-high-level-segment-un-climate-change-conference> (Visited on 24.12.2019).

² Ban Ki-Moon, “Climate Change Affects Us All, But It Does Not Affect Us All Equally,” United Nations Secretary General, 2007, *available at*: <https://www.un.org/sg/en/content/sg/statement/2007-12-13/climate-change-affects-us-all-it-does-not-affect-us-all-equally>. (Visited on June 23, 2020)

³ NASA, “The Causes of Climate Change,” Climate Change: Vital Signs of the Planet, 2022, *available at*: <https://climate.nasa.gov/causes/>. (Visited on June 4, 2019).

⁴ United Nations Climate Change, “Climate Finance,” UNFCCC, 2022, *available at*: <https://unfccc.int/topics/climate-finance/the-big-picture/climate-finance-in-the-negotiations>. (Visited on February 8, 2020).

accompany economic growth.⁵ There is still much to learn by examining climate change through a gender lens, as local initiatives led by NGOs, communities, and individuals are transforming gender and social inequalities in some cases.⁶

Environmental issues are complex, cross-boundary phenomena. However, their gendered nature is often overlooked. Ecofeminism emerged alongside second-wave feminism and the green movement in the mid-1970s, linking feminist and environmentalist concerns.⁷ It views the domination of nature as connected to the exploitation of women. Ecofeminist activism grew among women in the 1980s-1990s through the anti-nuclear, environmental, and women's rights movements.⁸

Recent initiatives of organizations like the UN Women and World Bank emphasize integrating gender perspectives into all climate change policies and practices.⁹ An expanding body of evidence shows human-caused global warming is raising sea levels, intensifying storms, heatwaves and droughts. The world faces an immense challenge, with the poorest disproportionately impacted as they lack resources to cope with floods, crop losses and disasters.¹⁰ Women make up most of

⁵ Johannes Urpelainen, "China, India, and Climate Change Negotiations," *Harvard International Review*, 2010, *available at*: <https://hir.harvard.edu/china-india-and-climate-change-negotiations/>. (Visited on July 27, 2019).

⁶ UN Women, "Grassroots Women's Initiatives," *UN WomenWatch: Women, Gender Equality and Climate Change*, 2009, *available at*: https://www.un.org/womenwatch/feature/climate_change/grassroots.html. Visited on March 27, 2021).

⁷ Chris J. Cuomo, "Ecofeminism," *feminism.eserver.org*, 2001, *available at*: <https://feminism.eserver.org/theory/ecofeminism/>. Visited on June 27, 2020).

⁸ Greta Gaard, "Ecofeminism Revisited: Rejecting Essentialism and Re-Placing Species in a Material Feminist Environmentalism," *Feminist Formations* 23, no. 2 (2011): 26-53, *available at*: <https://www.jstor.org/stable/41819661>. (Visited on July 22, 2021).

⁹ UN Women and Mary Robinson Foundation, "The Full View: Ensuring a Comprehensive Approach to Achieve the Goal of Gender Equality and the Empowerment of Women and Girls in the 2030 Agenda for Sustainable Development," 2018, *available at*: https://www.mrfcj.org/pdf/The_Full_View_Report2.pdf. (Visited on July 2, 2020).

¹⁰ OECD, "Climate Change Litigation against Governments and Corporate Polluters: New Estimates," 2021, *available at*: <https://www.oecd-ilibrary.org/sites/f3cd5d9a-en/1/3/1/index.html?itemId=/content/publication/f3cd5d9a->

the poor affected by climate change due to systemic gender inequalities in status, opportunities, and resource access.¹¹

Gender inequalities exist across societies and shape climate change impacts. Women have less access to decision-making, resources, and information to cope with climate stresses like income, assets, and authority.¹² Men and women have different access to resources like land, networks, jobs, and credit. In times of stress, they have different options and 'safety nets' for coping with change.¹³ Their distinct roles also give them different climate adaptation knowledge and skills. Accounting for women's contributions results in more diverse options for preparing and coping.¹⁴

Recent studies conclude climate change is likelier to negatively impact women in poor communities. They face higher disaster mortality, work and income losses, health impacts, violence after disasters, increased water and fuel collection burdens and health problems from drought, and more severe effects of food price rises and shortages.¹⁵ Exacerbated health inequalities also occur from biological differences and gender roles.¹⁶ Out of the over 68 million displaced annually by climate since 2008,

en&_csp_=a14c0b7b3bd6a79a4a34848fd1e0438a&itemIGO=oeed&itemContentType=book. (Visited on November 4, 2021).

¹¹ UNESCO, "Women Should Be at the Heart of Climate Change Solution," 2015, *available at*: <https://en.unesco.org/news/women-should-be-heart-climate-change-solution>. (Visited on April 6, 2019)

¹² Sara Ahmed, "A Phenomenology of Whiteness," *Feminist Theory* 8, no. 2 (2007): 149-168, *available at*: <https://journals.sagepub.com/doi/abs/10.1177/1464700107078139>. (Visited on April 6, 2019).

¹³ Ryerson University, "Gender, Climate Change and Food Security," 2020, *available at*: <https://www.ryerson.ca/foodsecurity/resources/gender/>. (Visited on April 6, 2019).

¹⁴ UN WomenWatch, "Women's Indigenous Knowledge," United Nations, 2009, *available at*: https://www.un.org/womenwatch/feature/climate_change/downloads/Women's%20Indigenous%20Knowledge.pdf. (Visited on April 6, 2019).

¹⁵ CARE International, "Where the Rain Falls: Climate Change, Food and Livelihood Security, and Migration," 2020, *available at*: https://careclimatechange.org/wp-content/uploads/2019/12/2017_12_CARE-CDKN-Where-The-Rain-Falls.pdf. (Visited on October, 19, 2021).

¹⁶ World Health Organization, "Gender, Climate Change and Health," 2011, *available at*: <https://www.who.int/globalchange/GenderClimateChangeHealthfinal.pdf>. (Visited on April 6, 2019).

women and girls are disproportionately affected due to factors like poverty and limited natural resource access.¹⁷

Estimates state women comprise 43% of the agricultural workforce in developing countries, and 50-60% in parts of Asia and sub-Saharan Africa.¹⁸ Thus, women are impacted by any constraints on farming. Droughts and erratic rainfall increase women's work securing food, water, and fuel. Girls may leave school to help their mothers cope with the heavier workload.¹⁹ Collecting water occupies women and girls up to 200 million hours daily.²⁰ Girls are the first pulled from school for collecting firewood when deforestation occurs. These burdens fuel poverty cycles and limit women's economic and social capital to address climate change.²¹ Disasters also increase gender-based violence including harassment, domestic violence, child exploitation, and trafficking from overcrowding and unsafe conditions in shelters.²² Poverty and community loss additionally increase violence likelihood.²³

Climate change magnifies pre-existing gender inequalities in resource access and decision-making, increasing poor women's vulnerability. Limited land, credit, information, and technology access leaves women with fewer options when climate

¹⁷ UN Women, "Facts and Figures: Climate Change Disaster Risk Reduction," 2022, *available at*: <https://www.unwomen.org/en/news/in-focus/climate-change-and-disaster-risk-reduction>. (Visited on April 6, 2019).

¹⁸ FAO, "Women Hold Up Half the Sky," FAO Factsheets, 2020, *available at*: <https://www.fao.org/3/i2050e/i2050e.pdf>. (Visited on April 6, 2019).

¹⁹ FAO, "Women Hold Up Half the Sky," FAO Factsheets, 2020, *available at*: <https://www.fao.org/3/i2050e/i2050e.pdf>. (Visited on April 6, 2019).

²⁰ UNICEF, "Collecting Water is Often a Colossal Waste of Time for Women and Girls," August 29, 2016, , *available at*: <https://www.unicef.org/press-releases/unicef-collecting-water-often-colossal-waste-time-women-and-girls>. (Visited on April 6, 2019).

²¹ UNDP, "Discussion Paper: Gender and Climate Finance," 2016, *available at*: https://www.undp.org/sites/g/files/zskgke326/files/publications/Gender_and_Climate_Finance_-_Discussion_Paper.pdf. (Visited on March 22, 2020).

²² Siobhan Calafiura, "Climate Disasters Increase Risk of Gender-Based Violence," UN Dispatch, 2017, *available at*: <https://www.undispatch.com/climate-disasters-increase-risk-gender-based-violence/>. (Visited on July 14, 2020).

²³ Elizabeth Rourke, "The Influence of Gender on Resilience and Mental Health in Climate Displaced Individuals: A Scoping Review," *Nursing Forum* 57, no. 2 (2022): 302-310, *available at*: <https://onlinelibrary.wiley.com/doi/10.1111/nuf.12711>. (Visited on October 10, 2022).

change threatens their livelihoods.²⁴ Without addressing these disparities, climate responses will be ineffective or potentially worsen inequality. Women's domestic caretaking role also disproportionately burdens them to secure food, water, and supplies in droughts or disasters.²⁵ Gender-sensitive approaches are needed that tackle such problems.

Climate change impacts health through factors like air, water, food, and shelter. Many affected health risks show gender differences. Globally, disasters kill more women at younger ages, interacting with social status.²⁶ Undernutrition, malaria, and other climate-sensitive diseases also differ by gender. Women and girls suffer more from indirect, long-term climate hazard effects like drought-caused water and food scarcity.²⁷

India is experiencing rising temperatures, sea-level rises, changing precipitation patterns, and more frequent extreme weather events due to climate change.²⁸ These significantly impact agriculture, water, health, and migration. Women in India are especially vulnerable due to gender discrimination limiting their resources, mobility, education, healthcare, and decision-making.²⁹ Over 80% of rural women rely on climate-sensitive agriculture and natural resources, with few income

²⁴ UN WomenWatch, "Effects of Climate Change," United Nations, 2009, *available at*: https://www.un.org/womenwatch/feature/climate_change/downloads/Women_and_Climate_Change_Factsheet.pdf (Visited on June. 9, 2021).

²⁵ Oxfam International, "Gender Justice and the Extractive Industries," 2017, *available at*: https://oi-files-d8-prod.s3.eu-west-2.amazonaws.com/s3fs-public/file_attachments/bp-gender-justice-extractive-industries-081117-en.pdf. (Visited on January 8, 2021).

²⁶ World Health Organization, "Gender and Health," 2022, *available at*: https://www.who.int/health-topics/gender#tab=tab_1. (Visited on September 8, 2022).

²⁷ World Health Organization, "Gender, Climate Change and Health." 2014, *available at*: https://apps.who.int/iris/bitstream/handle/10665/144781/9789241508186_eng.pdf (Visited on June 9, 2023)

²⁸ Ministry of Environment, Forest and Climate Change, "India: Third Biennial Update Report to the United Nations Framework Convention on Climate Change," 2021, *available at*: https://unfccc.int/sites/default/files/resource/INDIA_BUR3_Highlights.pdf. (Visited on March 26, 2022).

²⁹ Oxfam India, "India: Climate Change Impacts," 2022, *available at*: <https://www.oxfamindia.org/climate-change-impacts-india>. (Visited on December 30, 2022).

options during climate disruptions.³⁰ Food and health risks increase when floods or droughts destroy crops. Girls are more likely pulled from school to fetch water or forage during shortages.³¹ Projected agricultural declines from climate change threaten women's household and economic security.³²

Rising temperatures and erratic rainfall also increase vector-borne diseases like malaria and dengue in India.³³ Pregnant women face heightened complications. Air pollution has likewise surged, causing respiratory disease spikes that disproportionately affect marginalized women exposed to indoor air pollution³⁴ Climate change further increases sexual and gender-based violence linked to loss of homes, livelihoods, and economic insecurity in rural communities. Early marriage of girls also rises as a negative coping strategy.³⁵

Uttar Pradesh faces acute climate challenges as India's most populous state with a vulnerable agricultural economy and recurrent extreme weather causing extensive crop losses.³⁶ Gorakhpur district in eastern Uttar Pradesh frequently experiences droughts, unusual rains, hailstorms and floods. It also has high mosquito-borne disease rates during monsoons.³⁷

Gorakhpur's women bear an outsized climate change burden. Despite over 90% of rural women relying on agriculture, they have negligible household decision-

³⁰ Alastair Smith, Saba Mebrahtu and Pauline Oosterhoff, "Climate Change Adaptation and Gender Relations: Lessons Learnt from Tamil Nadu, India," *Environment and Urbanization* 32, no. 1 (2019): 133–150, *available at*: <https://journals.sagepub.com/doi/full/10.1177/0956247819825831>.

³¹ Oxfam India, "Suffering in Silence: The Impact of the Climate Crisis on Women in Rural India," 2022, *available at*: <https://oxfamilibrary.openrepository.com/bitstream/handle/10546/621341/rr-suffering-silence-impact-climate-crisis-rural-women-india-100922-en.pdf>. (Visited on March 7, 2023)

³² UN Women, 'The Impact of Climate Change on Rural Women in Madhya Pradesh', 2013, p.19.

³³ Ankita Mondal et al., 'Increasing Trend of Malaria Incidence in India Due to Changing Weather Conditions', *Science of The Total Environment*, 2019.

³⁴ Nambi Appadurai et al., 'Climate Change and Women's Wellbeing in India: Evidence on Vulnerabilities from Rural Communities', *Climate and Development*, 2021. (Visited on May 4, 2022)

³⁵ "Climate Change, Disasters and Gender-Based Violence in the Pacific." Suva: UN Women, 2016, *available at* : <http://www.uncclearn.org/sites/default/files/inventory/unwomen701.pdf>, (Visited on June 25, 2020).

³⁶ NITI Aayog, 'Climate Vulnerability Assessment for the State of Uttar Pradesh', 2022, p.29.

³⁷ Oxfam, Uttar Pradesh: Climate Change, Urbanization, and Impact on Agriculture, 2009, p.16.

making or asset control.³⁸ With limited alternative income options, crop failures severely constrain women's economic and food security. Water scarcity also increases women's domestic workload fetching water. Families' coping strategies often involve cutting girls' education and health expenses.³⁹

Climate change thus exacerbates gender and socioeconomic divides in Gorakhpur. Integrating gender perspectives into local climate policies and adaptation is crucial. Prioritizing women's climate resilience through farm technologies, diversified incomes, social protection, and health services is vital for equitable and effective action. National and state governments must strengthen women's preparedness and response capacities in climate hotspots like Gorakhpur. A gender-transformative approach addressing entrenched gender inequality is key to tackling the climate crisis justly and inclusively.⁴⁰

1.2 NEED FOR THE STUDY

- Climate change impacts men and women differently due to existing gender inequalities that disadvantage women. Research is needed to document differentiated impacts.
- Women's livelihoods often depend more on threatened natural resources like subsistence agriculture, forests, etc. Climate change exacerbates their poverty and vulnerabilities.
- Health, economic, and physical security burdens of climate change are more pronounced on women in India due to wider gender disparities. Rural and urban Indian women across socio-economic groups face amplified climate risks, though low-income women are most vulnerable.

³⁸ Kuntala Lahiri-Dutt and Gopa Samanta, "Dancing with the River: People and Life on the Chars of South Asia," *available at*: Yale University Press, 2013, <https://www.jstor.org/stable/j.ctt5vm7wb>. (Visited on May 5, 2020)

³⁹ UN Women, "Climate Justice for Sustainable Development," 2015, *available at*: https://www2.unwomen.org/-/media/headquarters/attachments/sections/library/publications/2015/un%20women%20brief_climate%20justice.pdf?la=en&vs=4019. (Visited on April 6, 2020)

⁴⁰ NITI Aayog, 'Climate Vulnerability Assessment for the State of Uttar Pradesh', 2022, p.46.

- Women’s climate-sensitive livelihoods in farming, foraging, etc., are affected, while social restrictions on mobility and assets limit their adaptation options.
- Women’s unpaid domestic duties, like collecting water, fuel, etc., increase with climate disruptions like droughts. Curtails their time for education, livelihoods, etc.
- Climate change responses can play a transformative role by challenging restrictive gender norms and empowering women. Poorest women with negligible climate contributions disproportionately face the greatest livelihood and economic threats from climate change.
- Women have a limited voice in climate policymaking and solutions design despite being worst affected. Research can highlight their needs.
- The lack of research on gender-climate interlinkages in India constrains the development of targeted, gender-responsive climate policies and actions. Interdisciplinary gender-climate change research is needed to inform urgent policy reform for equitable and effective solutions benefitting vulnerable women.

1.3 OBJECTIVES

1. Understand climate change through a gender lens centering on women.
2. Analyse the link between Climate Change, gender equality, and effective climate action.
3. Study interactions between climate change, gender, and health and associated frameworks.
4. Study International and National Laws, policies, schemes, etc., relating to Climate Change and women’s health
5. Identify solutions benefitting women and not excluding or disadvantaging them.
6. Promote women’s participation in the climate change agenda at all levels.

1.4 HYPOTHESES

1. Women face more severe climate change health impacts enhanced by inequality, discrimination, and poverty.
2. Climate adaptation often treats women as vulnerable beneficiaries rather than rights-holders.
3. Laws on women's health don't adequately address climate change perspectives.
4. Women possess knowledge and skills for climate action but are under-represented in decisions.

1.5 RESEARCH METHODOLOGY

Doctrinal Methodology:

- Primary sources - International treaties, national legislations, judicial decisions
- Secondary sources - Books, articles, newspapers, websites, e-resources

Non-Doctrinal Methodology:

For the non-doctrinal aspect of the study, The research employed a qualitative methodology for primary data collection to gain insights into the perspectives of women of Gorakhpur district on linkages between climate change and health.

Mixed methods using primary and secondary data are used. Primary data was collected through focused group and individual interviews of women, NGO head and their employees, health workers etc. and the interview questions was framed in a semi-structured manner.

Five focused group interviews were conducted with 7 to 12 women participants in each group from Gorakhpur district from different blocks, for 1 to 2.5 hours each. From these blocks Focused Group interviews were taken of in total 50 women. Also, 6 individual in-depth interviews have been conducted with three women Farmer leader, 2 NGO head and their employees, 1 health workers from across the 5 blocks.

Secondary data collected from online and print sources like journals, news reports etc. Besides primary data, secondary data from existing reports, journal articles, census records, policy documents etc., is also examined to support the

analysis. The empirical study provides critical ground-level evidence on climate change and women's health linkages to inform gender-responsive policymaking.

1.5.1 Universe of The Study

The universe for the empirical study comprises women residing in the rural areas of Gorakhpur district in Uttar Pradesh. As per Census 2011, the total population of Gorakhpur district is 4,436,275, of which 2,360,784 are males and 2,075,491 are females. Nearly 83.4% of the population resides in rural areas.

For the purpose of this study, five blocks have been selected from the Gorakhpur district based on their vulnerability to climate change events like floods, droughts, heat waves, etc. The selected blocks are Campierganj, Jungle Kaudia, Sahjanwa, Khorabar and Bansaon.

Data Collection Tools

A qualitative tool is utilized to gather primary data for the study. The qualitative tools include focused group discussions and individual Interviews.

1.5.1.1 Focused Group Discussions

A total of 5 focused group discussions (FGDs) have been conducted with groups of women from the 5 selected blocks. Each FGD had 8 to 12 participants and lasted for around 1 to 2:30 hours. Purposive sampling technique was used to identify women participants from climate-vulnerable groups like small, marginal farmers, landless laborers, factory workers, etc. Key topics covered included:

- Understanding of climate change
- Impacts of climate events like floods, droughts, heat waves, etc.
- Effects on agriculture, livestock, food security, water availability etc.
- Impacts on health - malnutrition, diseases, mental stress, etc.
- Coping mechanisms and adaptation strategies
- Policy awareness and suggestions

1.5.1.2 Individual Interviews

6 individual in-depth interviews have been conducted with 2 women, 2 NGO's head and 3 of their employees, 5 health workers from across the 5 blocks. The in-depth interviews used open-ended questions to capture detailed personal and professional experiences of:

- Climate change impacts on the lives and livelihoods of women
- Effects on income, food security, health, safety, etc.
- Coping methods adopted
- Policy and institutional support received
- Recommendations for interventions

1.6 SIGNIFICANCE OF THE STUDY

1. Generates empirical evidence on gender-differentiated climate change impacts on women's health in Gorakhpur, a climate-vulnerable district.
2. Highlights the pathways through which climate events like floods, droughts, etc., affect women's physical and mental health.
3. Brings forth experiences of marginalized women facing climate change risks.
4. Provides insights into resilience, adaptation, and coping methods adopted by women.
5. Analyses the awareness, adequacy, and outreach of government policies and interventions.
6. Informs evidence-based, gender-responsive policymaking on climate change and health.
7. Mainstreams gender in climate change and disaster management discourse and practice.
8. Contributes to scholarship on linkages between climate change, gender, and health.
9. Strengthens the case for women's participation in climate change adaptation and governance.

1.7 LIMITATION OF STUDY

- The primary data collection was geographically limited to select climate-vulnerable areas of the Gorakhpur district. Visiting remote flood-prone areas posed physical risks due to weak infrastructure and harsh weather conditions. Several focused group interviews had to be rescheduled or cancelled due to the inability of women to gather together for discussions for many inevitable reasons.
- Given the large size of Gorakhpur district, it was not feasible for the researcher to cover the entire region. Only certain blocks identified as climate-sensitive were included based on purposive sampling to understand better the linkages between climate change and women's health using qualitative methods. The findings have limited generalizability for the entire district.
- During interviews, some respondents initially faced difficulties understanding the concept of climate change when asked directly. The questions had to be explained in detail and related to tangible experiences like changing rainfall patterns, rising temperatures, floods, etc. This highlights the low awareness of climate change processes among target communities.
- Language barriers posed some challenges as most interviews were conducted in Hindi while respondents were more comfortable conversing in local dialects like Bhojpuri. The researcher had to carefully explain the terminologies used in simple terms to ensure common understanding.
- A majority of women participants were illiterate with limited formal education. Explaining the nuances of climate change and health impacts required using multiple colloquial examples so women could relate the questions to their personal experiences. This underscores the difficulties in researching perceptions of complex phenomena like climate change among marginalized sections.
- A single researcher conducted the study due to time and resource constraints. More extensive primary data collection through a team of investigators could have covered wider geographical areas and sample size.

1.8 SCHEME OF CHAPTERS

Chapter 1- Introduction

This Thesis undertakes an in-depth study of the linkages between climate change and women's health in the specific geographic context of Gorakhpur district in Uttar Pradesh, India. The article employs an interdisciplinary perspective combining legal, policy, and social analyses to examine the problem holistically. In order to achieve the object of the study, the thesis is divided into seven chapters.

The introductory chapter outlines the rationale, objectives, hypotheses, and methodology of the study. It establishes the conceptual foundations connecting climate change, gender, and health.

Chapter 2 - Relationship between Women, Environment and Climate Change

This chapter discusses the disproportionate impacts of climate change and environmental degradation on women due to existing gender inequalities. This chapter examines the impacts of climate change on all aspects of women's lives, including economic, social, psychological, physical, and political spheres in developing countries. It analyzes the gendered effects of environmental issues like deforestation, desertification, and biodiversity loss, which threaten women's livelihoods. This chapter introduces the concept of ecofeminism, which links social and ecological issues and advocates for holistic environmentalism. It also discusses the linkages between SDGs to achieve sustainability, focusing on gender equality. This chapter highlights women's critical yet undervalued role in environmental conservation and sustainable development.

Chapter 3 - The Impact of Climate Change on Women's Health

This chapter explores climate change as a significant threat to women's health and exacerbating health inequalities. It examines the adverse impacts on women's reproductive health from issues like food and water insecurity, disrupted healthcare services, etc. This chapter discusses the mental health toll on women from extreme weather events, environmental degradation, and post-disaster gender-based violence. It recommends strategies like improving healthcare access, building resilient infrastructure, and promoting gender equality in climate policies to address these impacts.

Chapter 4 - International Laws and Policies on Climate Change and Women's Health

This chapter reviews various international laws and policies adopted to address climate change and women's health. It discusses instruments like UNFCCC, the Paris Agreement, and SDGs, which recognize climate change's differential gender impacts. This chapter mentions regional policies like the EU's Gender Action Plan on Climate Change and AfDB's Gender and Climate Change Strategy. It notes while these instruments promote gender mainstreaming in climate policies, more effective implementation is needed.

Chapter 5 – National Laws and Policies on Climate Change and Women's Health

This chapter discusses Indian laws and policies on climate change like NAPCC, NGT Act, Energy Conservation Act, etc. It mentions policies empowering women and addressing women's health in India - National Policy for Women, National Health Policy, etc. This chapter discusses programs improving women's climate resilience in India, such as NRHM, JSY, etc. It also notes laws against gender-based violence are crucial for protecting women's physical and mental health. This chapter highlights the existing gaps in gender integration within national climate policies.

Chapter 6 – Data Analysis and Interpretation

This chapter presents primary data from focused group interviews conducted with women in Gorakhpur on climate change impacts. It records women's experiences of climate vulnerabilities across areas like health, livelihoods, food security, etc. This chapter analyzes the data to assess the study hypotheses on amplifying women's pre-existing health vulnerabilities due to climate change. Based on the findings, it highlights the importance of women's participation in climate action. The sixth chapter is the heart of the whole of the research work. Through textual discussion, tabular and graphs, the data is critically analysed and reported along with the findings. It presented empirical data on climate change perspectives and impacts elicited through focused group discussions among marginalized women across five administrative blocks in Gorakhpur district. Their observations of tangible environmental alterations in recent decades like declining rainfall, agricultural

productivity, forest cover, water availability etc. as well as escalating weather extremes substantiated local climate change trends consistent with regional projections. Participants articulated how climate disruptions to agriculture and livelihoods are amplifying poverty, malnutrition, water insecurity and health risks for rural communities, especially women who have minimal assets or incomes. Testimonies underscored challenges like maternal undernutrition, malaria, diarrhea, heat stress, mental stress that disproportionately affect women given their gender roles, care burdens and lack of healthcare access. Women also lack monetary or institutional support but undertake farm-level adaptations drawing on traditional wisdom and collective action. Systemic resilience building demands gender-responsive interventions across agriculture, infrastructure, ecological restoration, basic services, governance and social protection, prioritizing the marginalized. The research validated the urgent need to facilitate women's active participation in climate decisions to formulate just, inclusive solutions reflecting ground realities. Some of the important findings of chapter VI is as follows:

Introduction

The empirical study conducted in Gorakhpur district examined impacts of climate change on women's health through focus group interactions and in-depth interviews with affected communities, NGO representatives, health workers and experts. This thematic analysis presents key findings from the qualitative interviews across relevant topics.

Knowledge and Observation of Climate Change

The study found high degree of awareness on climate change among women participants. They have observed discernible shifts in weather patterns - higher temperatures, variable rainfall, reduced winter chill, droughts and floods etc. Most women linked these changes to human activities like deforestation and environmental degradation based on their indigenous knowledge.

Climate Change Impacts on Livelihoods

Women reported how unpredictable rainfall, frequent crop losses, livestock deaths, water scarcity and declining farm incomes associated with climate disruptions have severely impacted rural livelihoods dependent on agriculture and forest produce

collection. Landless laborers are the worst affected due to reduced farm employment opportunities during lean periods. Income losses lead to rising debt and distress migration among men.

Food Security and Nutrition

With climate variability reducing agricultural productivity and environmental common resources, women noted decreasing food availability and access for poor rural households. As droughts and floods destroy crops, food prices escalate making eggs, vegetables, fruits unaffordable - negatively impacting nutrition. Lack of diverse diet gives rise to anemia, malnutrition and deficiency disorders especially among pregnant women and children.

Physical Health Burdens

Women highlighted multiple climate-linked health burdens faced by them - heat exhaustion, dehydration, malaria, dengue, diarrhea from contaminated water post floods, mental stress, snake bites etc. Lack of access to healthcare services exacerbates the situation during extreme weather events and disasters. Elderly, children, lactating mothers, pregnant women face the highest health risks as their existing vulnerabilities get amplified by climate change.

Water Scarcity

Reduced and erratic rainfall coupled with over extraction of groundwater is leading to acute water scarcity in parts of Gorakhpur as per women's testimonies. Handpump levels are falling rapidly, some wells have fully dried up. This forces women to expend greater time and effort to fetch water from distant sources exposing them to health risks. Poor water quality is causing diarrheal diseases.

Climate Vulnerabilities of Smallholder Women Farmers

Marginal and landless women farmers solely dependent on rains for agriculture are the worst impacted by rainfall variability as they have no irrigation facilities. With sparse incomes, they also have limited resources to adapt and cope with climate vagaries. Caste and gender discrimination in resource distribution exacerbates their vulnerability.

Increased Work Burden

When men migrate temporarily for work during lean agriculture seasons or disasters, women shoulder the entire domestic responsibility - collecting water and firewood, cooking, childcare along with agricultural tasks. Juggling multiple roles without rest takes a toll on their mental and physical health. Relief and recovery efforts post disasters also fall disproportionately on women increasing their workload.

Adaptation Practices

To cope with climate change, women have adopted practices like changing cropping patterns, integrated farming, vermicomposting, water harvesting, mixed cropping, reliance on traditional seeds, crop diversification etc. But most of these are autonomous adaptations at individual level. They voiced the need for greater external support through training, resources, climate services and social safety nets.

Gender and Social Issues

The deep-rooted gender discrimination in Gorakhpur's patriarchal socio-cultural context discriminates against women across spheres, restricting their decision making power and participation in local governance. Male outmigration is leading to growing incidence of domestic violence. Early child marriages of girls have increased as families no longer see benefit in educating them with declining agriculture opportunities.

Gaps in Healthcare Services and Policy Support

Health services are ill-equipped to handle new climate-induced diseases and morbidity patterns. Rural public health infrastructure is already strained catering to large populations with staff shortages, lack of medicines etc. Outbreaks of vector-borne diseases during floods proliferate in absence of surveillance and timely interventions. Lack of gender disaggregated data prevents robust diagnosis and policies focused on climate-health linkages. Healthcare delivery itself gets disrupted during extreme weather disasters due to mobility issues, power outages etc. Inadequate disaster preparedness of health department.

Positive Developments

A few women did note some beneficial changes - improved access to weather forecasts helps them plan agriculture better; water storage systems and tubewells have assisted in water availability; cash compensations, crop insurance and pensions provide relief against crop losses; gas cylinders and biogas plants have reduced firewood needs benefiting health. But scaling up such initiatives remains a major gap.

Recommendations

Women put forth several recommendations - expand healthcare facilities with mobile clinics for remote areas; increase women's access to climate resilient seeds, credits, farming technologies; provide clean drinking water and strengthen sanitation in climate vulnerable villages; create local green jobs for women especially in natural resource regeneration. They called for channeling women's traditional knowledge into adaptation efforts and ensuring equal participation of women in local governance and planning processes.

Chapter 7 - Conclusion and Suggestions

This concluding chapter summarizes the key findings and concludes that climate change solutions must be gender-responsive to address the disproportionate impacts on women. It provides policy recommendations like the use of gender-disaggregated data, enhancing women's participation, gender budgeting of climate funds, etc., to mainstream gender in climate action.

1.9 CONCLUSION

Climate change is a complex and multifaceted issue, with far-reaching implications for human health and well-being. The impacts of climate change on women's health are particularly concerning, given the existing gender inequalities that disproportionately expose women to vulnerability and marginalization.

This study has examined the socio-legal dimensions of the nexus between climate change and women's health, drawing on a range of theoretical and empirical perspectives. It can be seen after the study that Climate change impacts on women's

health through a variety of direct and indirect pathways, including extreme weather events, air pollution, food insecurity, and water scarcity. Women's vulnerability to climate change is exacerbated by existing gender inequalities, such as limited access to education, employment, and healthcare. The law and legal institutions play a critical role in shaping women's responses to climate change, both positively and negatively.

The study has also highlighted the need for a gender-responsive approach to climate change mitigation and adaptation. This entails designing and implementing policies and programs that specifically address the needs and concerns of women, and that promote gender equality and empowerment. climate change poses a serious threat to women's health and well-being. However, women are also key agents of change in the fight against climate change. By addressing the gender dimensions of climate change, we can create a more just and sustainable future for all.

Climate change poses immense threats to human health and survival, with impacts that are profoundly gendered in nature. This concluding chapter synthesizes the salient findings that have emerged from the interdisciplinary study undertaken utilizing doctrinal and non-doctrinal methodologies across chapters to analyze the nexus between climate change and women's health, with a geographical focus on Gorakhpur district in Uttar Pradesh.

1.9.1 HYPOTHESIS TESTING

Hypothesis No. 1: “Women face more severe climate change health impacts enhanced by inequality, discrimination, and poverty” has been proved. Interview responses highlighted how women from marginalized classes and those in poverty face amplified health burdens from climate change. They lack resources to adapt effectively (which is discussed under Chapter 2, Chapter 3, Chapter 6). Deep gender discrimination restricts their decision-making power even within households (Chapter 10). Hygiene, nutrition, and healthcare access suffer during disasters (Chapter 2, Chapter 6). Social biases also constrain public resource allocation and policy focus on women (Chapter 2, Chapter 3, Chapter 6). Thus gender, inequalities and poverty enhance climate change impacts.

Hypothesis No. 2: “Climate adaptation often treats women as vulnerable beneficiaries rather than rights-holders” is also proved. There is minimal recognition of women's agency, capacities, and knowledge. Interviews revealed climate adaptation plans treat women mainly as vulnerable victims, overlooking their contributions (Chapter 2, Chapter 6). Women have limited role in governance, and state-led adaptation efforts are mostly top-down excluding community participation (Chapter 4, Chapter 5). Lack of gender disaggregated data maintains status quo (Chapter 2, Chapter 6). This renders women mere recipients of external assistance rather than rights holders in climate actions.

Hypothesis No. 3: “Laws on women’s health don’t adequately address climate change perspectives” is also proved as no laws or policies comprehensively address the intersection of climate change, environment, and gendered health impacts (Chapter 4, Chapter 5). Significant legal and policy gaps exist despite disproportionate morbidity and mortality burdens faced by women (Chapter 4, Chapter 5, Chapter 6). Lack of commitment is also visible in poor health infrastructure and services during disasters. Overall, the legal-institutional framework remains inadequate to safeguard women's health from climate risks.

Hypothesis No. 4: “Women possess knowledge and skills for climate action but are under-represented in decisions” is also stand proved as Interviews highlighted lack of participation by women in local governance and leadership (Chapter 6). Their indigenous adaptation knowledge and solutions find little space in top-down state-designed schemes (Chapter 4, Chapter 5). Lack of gender disaggregated data further limits relevant policymaking (Chapter 2). Thus, women remain underrepresented structurally in climate change decision making and planning.

The empirical findings and analyses across chapters substantiate all four hypotheses, proving women's health risks are exacerbated by existing gender, social and policy vulnerabilities that require urgent redressal.

1.10 SUGGESTIONS AND RECOMMENDATIONS

Based on the empirical insights and integrated analysis, the following priority recommendations are put forward:

Community-Led Initiatives

- Facilitate peer learning networks for women farmers to share indigenous adaptation knowledge, resources and scale localized solutions.
- Build capacities of women's self-help groups (SHGs) for climate-smart agriculture and diversified livelihoods through clean energy, nutrition schemes etc.
- Develop village health volunteers program equipping women with skills to monitor climate-health linkages and amplify community needs.
- Enable women to undertake local risk mapping and adaptation planning processes through participatory methodologies.

Institutional Reforms

- Create interdepartmental convergence mechanisms between health, ICDS, agriculture, water, disasters, social welfare and climate resilience programs tailored to hotspots like Gorakhpur.
- Establish gender units within state climate adaptation planning processes to inform gender audits, data collection, financing and monitoring systems.
- Develop district-level gender impact assessments and responsive interventions for health, farming and disaster management systems.
- Scale up relevant infrastructure like primary healthcare facilities, clean water access, hazard shelters and decentralized renewable energy across climate vulnerable villages.

Mainstreaming Gender

- Mandate and build capacities for gender-responsive budgeting across all climate change and development schemes in Uttar Pradesh.
- Set targets and implement policies to increase women's participation and leadership in local governance bodies, public climate institutions and decision-making.

- Provide gender sensitization training and tools to frontline workers including ASHAs, anganwadi, agriculture extension, disaster response and local officials.
- Ensure schemes on social protection, insurance, pensions, and climate-smart inputs target women farmers and workers.

Need for Research and Data collection.

- Generate district-level sex-disaggregated data on climate risks and impacts especially occupational health for women in agriculture and informal sectors.
- Undertake gender analyses of health vulnerabilities linked to heat, vector diseases, water security and disasters through longitudinal mixed methods studies.
- Assess effectiveness of current adaptation and resilience schemes through a gender lens to identify gaps.
- Develop gender-responsive climate change and health indicators and integrate within monitoring of goals, policies and programs.

Legal and Policy Reforms

- Incorporate gender and social inclusion mandates within State Action Plan on Climate Change aligned to district realities.
- Mandate gender audits, dedicated financing and women's leadership in District Disaster Management Plans and infrastructure standards.
- Pass legislation prohibiting discrimination in women's property and land rights to build climate resilience.
- Develop legal protections ensuring access of climate migrants to healthcare, housing and gender-based violence support services.
- Legal and Policy Reforms for India

Based on the study, several broad policy recommendations can be outlined:-

- Firstly, national and state governments must mandate robust gender integration within key policies on climate resilience, agriculture, health, water, disaster management, infrastructure and livelihoods by institutionalizing gender audits, vulnerability assessments, budgeting and monitoring.

- Secondly, substantial investments should be directed towards decentralized, community-led climate adaptation platforms especially for women's collectives with adequate capacity building to develop context-specific solutions.
- Thirdly, universal access to healthcare, clean water and sanitation, clean energy and social protection schemes needs to be rapidly expanded to build climate resilience capacities for rural women.
- Fourthly, climate change perspectives must be mainstreamed within health, nutrition and ICDS programs to prepare the systems to address escalating public health risks.
- Fifthly, women's land rights should be enhanced to strengthen climate change adaptation in agriculture. Finally, increasing women's representation in local governance, climate institutions and forest, water committees through quotas and training is vital to engender policymaking.

Some concluding reflections can be offered based on the study insights regarding principles and approaches required to craft inclusive climate actions. Fundamentally, climate policies and interventions must align with eco-feminist philosophy prioritizing compassion, cooperation, equity and ethics of care towards the socially and ecologically marginalized. Secondly, India's sustainable development trajectory should balance ecological limits and human development needs through appropriate technologies, circular economies and low-carbon lifestyles. The onus lies on the global North which has disproportionately contributed to climate change to support just transitions in developing countries through climate financing. Thirdly, climate change solutions must empower communities rather than impose external technical or market-led models. Platforms should enable farmers, fishers, indigenous groups and women using bottom-up approaches to lead context-specific resilience plans. Fourthly, all citizens including policymakers should cultivate climate change literacy and locate themselves in the narrative. Lastly, India must recognize women not simply as victims but as crucial stakeholders whose inclusion brings holistic perspectives vital for systemic change.

Translating integrated findings into action across these thematic areas can enable transformative policies empowering women to secure climate justice and sustainable development in Gorakhpur and beyond.

1.10.1 WAY FORWARD: IMPLICATIONS FOR CLIMATE JUSTICE

Climate change intersects with and amplifies gender inequalities, posing disproportionate threats to the health, rights and development of women and girls globally. As this study illuminated, cascading environmental disruptions are straining the lives and livelihoods of marginalized women in climate hotspots like Gorakhpur, Uttar Pradesh. Their accounts reveal adverse impacts on farming, food security, water availability, health, nutrition and gender roles that undermine resilience.

Yet, prevailing laws, policies and programs fail to tackle these differential burdens due to lack of local gender perspectives and participation in adaptation governance. Addressing gaps through the recommended priority actions can progress gender-just climate solutions while empowering women as leaders. The study affirms that participatory, socio-legal approaches to uncovering grounded realities and barriers provide vital tools to advance climate action aligned with principles of inclusion, human rights and equity.

As climate change intensifies, growing movements for climate justice demand transformative systems change. The world requires urgent, rights-based transitions from fossil fuel dependence towards resilient, low-carbon societies that enhance lives, health, and capabilities. Realizing locally defined priorities of marginalized women is indispensable to such transformation. Their insights offered through this thesis underscore that climate policy divorced from community voices and feminist perspectives risks amplifying injustice.

Renewed political commitment and solidarity are vital to drive structural shifts enabling sustainable, egalitarian futures. To secure climate justice amidst converging environmental and social crises, leadership must heed those experiencing the harshest climate change burdens to illuminate inclusive pathways forward. Upholding the health, agency, and rights of India's rural women through policy reforms, resources and collective action remains imperative in the struggle for ecologically just, equitable development. The quest ahead necessitates tapping women's knowledge, needs and

powers to overcome intersecting risks, advance adaptation frontiers and thereby, societal transformations.

Empowering Women as Leaders in Adaptation is need of the day. The study affirms that participatory, socio-legal approaches to uncovering women's grounded realities provide vital tools to advance climate action aligned with inclusion, human rights and equity principles. Targeted reforms informed by women's voices and leadership can progress gender-just climate solutions in agriculture, health, disasters, and decision-making.

Women possess rich insights on localized climate impacts and adaptations that remain underutilized in policy. Facilitating women-led participatory risk mapping, adaptation planning, and community monitoring can amplify solutions tailored to marginalized groups. Peer learning networks on indigenous practices and climate-smart solutions are also key. Scaling up resilience requires integrating gender analysis from district climate plans to disaster systems. Setting targets for women's leadership, gender audits and budgeting, sex-disaggregated data, and training frontline workers can bridge policy gaps. Legal reforms must prohibit climate-linked discrimination against women in resources and services.

Climate change interacts with and exacerbates gender inequalities, disproportionately threatening women's health, rights and development worldwide. Climate change poses a civilizational challenge with profound implications for public policy in coming decades. This study sought to unravel the intricate connections between gender, climate change and health using an interdisciplinary, socio-legal lens with empirical insights from Gorakhpur, a climate change hotspot. Findings reveal that women bear multifaceted risks from climatic disruptions due to entrenched gender inequalities but remain marginalized from environmental decision making and policies. Tackling this imbalance by mainstreaming gender into climate change governance, climate-proofing development sectors and facilitating community-centric just transition policies is vital for India's resilient and equitable growth. Environmental stewardship; responsible agriculture; universal provision of water, food, healthcare and social security; decentralization of basic services; along with inclusive climate institutions and local adaptation planning are foundations for securing inter-generational climate justice. Core principles of gender equality,

ecologically aligned lifestyles and radical compassion for the planet and its most vulnerable denizens must sit at the heart of global climate consensus as humanity navigates an increasingly turbulent future.

In conclusion, climate change constitutes the most profound sustainability challenge confronting India with serious gender, health and livelihood implications. Protecting its marginalized citizens calls for urgent recalibration of development pathways founded on eco-feminist principles like equality, cooperation, sufficiency, and solidarity. Prioritizing community-led solutions to heal fractures between society, ecology and economy can catalyze a transformative, climate-resilient future where the costs and benefits are justly shared. But truly engendering change requires dismantling persistent gender gaps and empowering women's collective agency. Their unmatched resilience and wisdom remain humanity's best hope to equitably adapt to the climate crisis in harmony with nature.

1.11 SCOPE FOR FURTHER RESEARCH

- Comparative study on climate change impacts across multiple climate-vulnerable districts of Uttar Pradesh to identify regional variations.
- Investigating the effects of extreme heat on maternal health outcomes, mental health implications, and women's labor productivity in rural areas.
- In-depth study on the socio-economic costs of climate change adaptation and coping mechanisms adopted by women.
- Evaluating the gender-responsiveness of government policies and programs on climate resilience, agriculture, and livelihoods. Gender budgeting analysis of state allocations on climate change adaptation across health, WASH, social protection, etc.
- Assessing women farmers' access to climate-smart agricultural technologies, information, and institutional credit. Exploring the traditional ecological knowledge of women and the scope for integration in climate adaptation.
- Analysing impacts of male out-migration as a climate coping strategy on women's work burdens and well-being.
- Studying the effects of women's participation in local governance on community climate resilience. Investigating the role of women's collectives and self-help groups in facilitating climate change adaptation.

- There is immense scope for extending this research across scales, themes, and disciplines to further enrich the scholarship on gender and climate change. Intersectional perspectives can provide a more holistic understanding of climate vulnerabilities.