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A Qualitative Analysis of the Interlinkage Between Gender and Climate

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Abstract

This study explores the complex interlinkages between gender disparities and environmental challenges, highlighting how systemic inequalities exacerbate women's vulnerabilities to climate change, natural disasters, and resource degradation. Using a qualitative approach, the research examines how environmental degradation disproportionately affects women due to entrenched socio-economic barriers, limited resource access, and exclusion from decision-making processes. Drawing insights from diverse contexts, including rural Zimbabwe, Bolivia, Nepal, Australia and South Africa, it underscores the urgent need for gender-sensitive policies in climate adaptation and resilience building. The findings reveal that integrating women's perspectives and leadership into environmental and economic frameworks enhances sustainability outcomes, emphasizing the interconnectedness of gender equality, climate action, and sustainable development.

Keywords: Gender disparities, climate change, environmental degradation, gender-sensitive policies, sustainability, climate adaptation, women's empowerment, socio-economic inequalities, gender wage gap

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INTRODUCTION

The intersection of gender disparities and environmental challenges is one of the most significant regions of concerns globally since these two issues are prevalent across the globe irrespective of the region being developed or developing or underdeveloped. Women, particularly in developing regions, are disproportionately affected by environmental crises such as climate change, natural disasters, and resource degradation. This disparity stems from entrenched socioeconomic inequalities, limited access to resources, and the gendered division of labour. According to the International Labour Organization (ILO), women globally earn approximately 20% less than men, with the gap widening in sectors heavily impacted by environmental challenges, such as agriculture and informal economies. This wage disparity reflects broader structural barriers, including occupational segregation and restricted access to decision-making roles.

Environmental degradation and natural disasters have far-reaching consequences for labour markets, often increasing vulnerabilities among already disadvantaged groups. For example, the 1998 Bangladesh flood caused significant labour disruptions, disproportionately affecting women, who faced greater difficulties in re-entering the workforce due to caregiving responsibilities and loss of economic assets. Similarly, natural disasters like hurricanes in Mexico have shown that poorer regions, where women often bear the brunt of socioeconomic inequality, experience prolonged economic hardships and slower recovery processes. The United Nations underscores these challenges in its Sustainable Development Goals (SDGs), particularly SDG 5, which seeks to achieve gender equality and empower women and girls. Achieving this goal is fundamental for the realization of all other SDGs, as gender equality is intrinsically linked to progress in areas such as poverty eradication (SDG 1), quality education (SDG 4), and climate action (SDG 13).

Women's vulnerabilities to environmental challenges are further compounded by their roles in managing natural resources. The Food and Agriculture Organization (FAO) estimates that women constitute 43% of the agricultural workforce in developing countries, yet they have significantly less access to land, credit, and training. This imbalance limits their capacity to adapt to environmental changes, such as droughts or soil degradation. Furthermore, women are

often excluded from climate decision-making processes at local and global levels. A United Nations Development Programme (UNDP) report highlights that only 29% of global climate negotiators are women, underscoring the gender gap in shaping climate adaptation and mitigation strategies.

Efforts to address these disparities must integrate gender-sensitive approaches into environmental and economic planning. Research shows that empowering women through equitable wage structures, access to education, and participation in policymaking leads to more effective and sustainable outcomes. For instance, data from the Global Gender Gap Report 2023 indicates that countries with higher gender parity tend to perform better in climate adaptation and resilience-building. Incorporating women's knowledge and leadership in managing natural resources has also been shown to enhance biodiversity conservation and improve community resilience to climate shocks.

THE GENDER-CLIMATE NEXUS

Inorder to understand the interlinkage between gender and the physical climate, what we need to first understand is how one is affecting the other and vice versa. To understand this concept in depth we shall look into three questions and through the analysis of literature try to solve them. Authors have tried to understand how the physical environment have effected women differently over time both physically and then in turn economically as well. Adaptation to climate change is also a very important phenomenon of this and thus we have taken that into consideration as well.

1. **How do environmental challenges intensify gender inequalities, and what structural solutions can address these vulnerabilities?**

The relationship between gender and environmental challenges reveals the deep inequalities embedded in societal structures. Women often face greater risks than men due to biological roles, economic disadvantages, and societal norms. Susan Buckingham-Hatfield (2000) sets the foundation by explaining how these inequalities intensify women's vulnerabilities to environmental issues. Women's responsibilities in caregiving and resource management,

combined with lower wages and limited access to decision-making roles, make them disproportionately affected by environmental degradation. This creates a cycle where women are unable to address or mitigate these challenges effectively.

Nightingale, A. (2006) investigates the intricate relationship between gender and environmental issues, a topic of ongoing debate within eco-feminism and political ecology. Published in *Environment and Planning D: Society and Space*, the paper examines whether the gender-environment nexus is essential or contingent. Nightingale critiques existing literature, arguing that gender itself has been under-theorized in environmental studies. Drawing from post-structural feminism, the paper re-conceptualizes gender as a dynamic process, emphasizing the symbolic and material constructions of gender relations within environmental contexts. By doing so, Nightingale highlights the limitations of focusing solely on household and community levels, advocating for an expanded framework to explore gender's broader social and cultural dimensions. To illustrate these concepts, the author uses a case study of community forestry in Nepal. The study demonstrates how gender relations are reproduced and transformed through both symbolic and material processes. Nightingale's work urges political ecologists to critically interrogate the processes through which gender relations become salient, offering a fresh perspective on the gender-environment nexus.

Building on this, Bina Agarwal (1992) shifts the focus to women in developing countries, who face even more severe impacts due to resource scarcity. She critiques Western ecofeminism for its ideological focus and instead introduces "feminist environmentalism," which links women's struggles to their dependency on local ecosystems. Agarwal argues that addressing women's environmental vulnerabilities requires structural changes. This includes giving women greater control over resources and including their voices in environmental policymaking. Her work highlights the importance of addressing the material realities of women's lives to foster sustainability.

Duerto-Valero et al. (2024) advance this discussion by emphasizing the lack of data on the gender-environment nexus. They stress that men and women experience environmental issues differently due to their roles in society. Recent efforts in data collection and analysis have

started to illuminate these dynamics. However, the authors argue that more robust and targeted policies are needed to integrate gender perspectives into environmental solutions. They call for better data-driven frameworks to address the unique needs of men and women.

Focusing on specific regions, Escalante and Maisonnave (2022) examine Bolivia, where environmental degradation worsens poverty and inequality. Women, already disadvantaged due to social and economic structures, are particularly vulnerable. The study highlights the urgent need for localized interventions that consider women's roles and challenges. Their findings reinforce Buckingham-Hatfield's and Agarwal's arguments, emphasizing that women's vulnerabilities are deeply rooted in broader societal structures and require comprehensive, community-driven approaches.

In Africa, Okere et al. (2023) explore how ecological footprints impact women's economic participation. They find that environmental degradation limits women's ability to engage in economic activities, further widening gender inequalities. This mirrors the findings of Duerto-Valero et al. (2024) and highlights a critical gap in policy responses. Women need greater access to resources and opportunities to reduce the impacts of environmental degradation on their livelihoods.

Finally, Chanaka (2014) focuses on rural Zimbabwe, where women bear the brunt of climate variability. Limited access to resources, technology, and decision-making roles increases their vulnerability. Chanaka argues that empowering women economically and involving them in climate policies is essential for reducing their risks. This ties back to Agarwal's call for systemic changes and Escalante and Maisonnave's emphasis on community-based solutions.

The papers collectively tell a story of how gender inequalities exacerbate women's vulnerabilities to environmental challenges. Buckingham-Hatfield highlights the foundational inequalities, while Agarwal and Duerto-Valero provide frameworks to address these issues. Escalante and Maisonnave show the need for localized interventions, supported by Okere et al.'s and Chanaka's emphasis on empowering women economically and socially. Together, these studies present a clear path forward: addressing gendered vulnerabilities requires systemic change, inclusive policies, and community-driven solutions.

2. **How can integrating gender-sensitive policies enhance the effectiveness of climate adaptation strategies?**

The relationship between gender and climate adaptation strategies is pivotal in understanding how societal norms and environmental challenges intertwine. The selected studies provide a layered narrative, starting from foundational gendered vulnerabilities and progressing to strategies for gender-sensitive adaptation.

Swai and Magayane (2012) begin the discussion with their exploration of adaptation practices in Tanzania's Dodoma region. They highlight how gender roles define responses to climate change: women prioritize addressing hunger and water scarcity, while men focus on crops and livestock. Their findings emphasize the importance of gender-sensitive data collection to design equitable policies. These insights set the stage for examining other regions with similar gendered dynamics.

Building on Swai and Magayane, Chanaka (2014) focuses on rural Zimbabwe, where limited access to resources amplifies women's vulnerabilities. She reveals how climate variability exacerbates food insecurity, reinforcing systemic gender inequalities. Her advocacy for empowering women economically and involving them in policymaking aligns with the earlier study's emphasis on targeted interventions, broadening the scope to include financial and technological empowerment.

Agarwal's (1992) concept of "feminist environmentalism" deepens this narrative by framing women's struggles within resource-scarce environments. Unlike Western ecofeminism, which focuses on ideological constructs, Agarwal stresses structural changes such as granting women resource control and including their voices in decision-making. Her framework complements Chanaka's findings by linking environmental struggles to broader systemic reforms, underscoring the need for material changes alongside policy adjustments.

Duerto-Valero et al. (2024) take the discussion further by addressing the lack of gender-disaggregated data on environmental impacts. They emphasize the necessity of robust data collection to illuminate how climate change affects men and women differently. Their argument

reinforces Agarwal's call for systemic reforms and highlights the need for evidence-based policy interventions to address gender-specific vulnerabilities effectively.

Shayegh and Dasgupta (2025) focus on South Africa, examining the economic implications of climate change on women's labour participation. They find that while high-skilled labour is less affected, women in low-skilled, high-exposure sectors face significant challenges. Their study builds on Duerto-Valero et al. by proposing targeted adaptation policies to reduce economic disparities and leverage gender equity in decision-making processes.

Pinho-Gomes and Woodward (2025) conclude the narrative with a global perspective, linking gender equality to enhanced resilience in climate adaptation. They demonstrate that societies with higher gender parity perform better in responding to environmental challenges. This study ties together previous findings by advocating for inclusive policies that prioritize both gender equity and climate resilience, providing a holistic approach to adaptation strategies.

The studies collectively build a compelling case for integrating gender-sensitive approaches into climate adaptation strategies. Starting from localized practices (Swai & Magayane, Chanaka) and expanding to systemic reforms (Agarwal, Duerto-Valero), they culminate in actionable global insights (Shayegh & Dasgupta, Pinho-Gomes & Woodward). Together, these works emphasize that addressing gender disparities is not only an issue of equity but also a cornerstone for effective climate adaptation and sustainable development.

3. **What are the gendered economic impacts of environmental disasters, and how can recovery processes address these disparities?**

The economic consequences of environmental degradation and disasters reveal deeply gendered effects, especially in labour markets and wage structures. The selected papers collectively highlight these dynamics, from immediate labour market disruptions to longer-term implications on wage disparities and recovery processes.

Brown and Ridge (2002) set the foundation by examining the Australian public sector under deregulated systems. They reveal that gender wage differentials are exacerbated in deregulated environments, where women face systemic disadvantages in wage negotiations due to

occupational segregation and entrenched biases. This study emphasizes the need for policy reforms to address gender disparities in labour markets.

Kirschberger (2017) expands on the discussion by analyzing the short-term effects of natural disasters on labour markets. The study highlights job losses and wage reductions as immediate consequences, particularly in vulnerable industries. While it notes eventual recovery through reconstruction efforts, these disruptions disproportionately affect women, who often occupy more precarious roles in the labour force. This finding aligns with Brown and Ridge's insights on the vulnerability of women in unstable labour systems.

Rodríguez-Oreggia (2013) focuses on hurricanes in Mexico, revealing significant labour market disruptions in poorer regions. The study highlights that while wealthier areas recover faster due to better infrastructure and aid, vulnerable regions experience prolonged economic hardships. This dynamic mirrors Kirschberger's findings but emphasizes regional inequalities, which often intersect with gender disparities to deepen the impact on women.

Belasen and Polachek (2009) provide insights into wage and employment shifts after hurricanes in the U.S. Their study finds that while disasters initially cause declines in wages and employment, reconstruction efforts can lead to wage recoveries that sometimes surpass pre-disaster levels. However, these gains are unevenly distributed, with women and low-skilled workers benefiting less due to systemic barriers. This echoes Rodríguez-Oreggia's emphasis on regional and demographic disparities.

Mueller and Quisumbing (2011) examine the labour market disruptions caused by the 1998 Bangladesh flood. Their findings show significant wage declines and shifts from formal to informal employment. Women, as primary caregivers, faced compounded challenges in balancing economic and domestic responsibilities, reinforcing the vulnerabilities identified by previous studies.

Osberghaus (2016) provides a comprehensive review of how natural disasters affect labour markets globally. The study highlights varying recovery outcomes based on the severity of disasters and the effectiveness of recovery programs. It notes that women in developing

countries often face prolonged disruptions due to limited access to recovery resources, aligning with Mueller and Quisumbing's findings in Bangladesh and Rodríguez-Oreggia's observations in Mexico.

Zhong and Huang (2019) bring a new dimension to the discussion by exploring the compounded health and economic risks of climate change, particularly for women. They highlight how gender disparities in health systems and economic participation exacerbate vulnerabilities, creating a feedback loop of disadvantage. This study underscores the importance of integrating health considerations into economic recovery strategies, reinforcing earlier calls for holistic interventions.

The studies collectively reveal the cascading economic effects of environmental and climatic crises, with gender playing a central role in shaping vulnerabilities and recovery outcomes. Brown and Ridge highlight systemic labour market biases, while Kirschberger and Rodríguez-Oreggia emphasize the immediate and regional disparities caused by disasters. Belasen and Polachek, Mueller and Quisumbing, and Osberghaus expand this understanding by examining recovery processes and long-term impacts. Zhong and Huang conclude the narrative by integrating health risks, advocating for comprehensive strategies that address the interconnected economic and social challenges faced by women.

CONCLUSION

The findings presented underscore the urgent need to address the intertwined challenges of gender disparities and environmental crises. Women, particularly in developing regions, are disproportionately affected due to systemic inequalities in wages, access to resources, and decision-making opportunities. Environmental challenges such as climate change and natural disasters exacerbate these disparities, further limiting women's economic participation and resilience.

To create meaningful change, targeted interventions are essential. Policies must prioritize equitable wage structures, provide access to education and training, and ensure women's inclusion in decision-making processes. Initiatives like the Sustainable Development Goals

(SDGs), especially SDG 5, offer a roadmap for integrating gender equality into broader environmental and economic frameworks. By empowering women through these measures, societies can unlock their potential as key contributors to climate adaptation, resource management, and sustainable development.

Furthermore, the evidence shows that gender-sensitive approaches yield better outcomes for both social equity and environmental sustainability. Countries with higher gender parity demonstrate stronger resilience to climate impacts and faster recovery from natural disasters. Addressing these challenges is not merely an ethical necessity but a strategic priority for achieving global sustainability and resilience. By bridging the gender gap and investing in women's capacities, we can create a more equitable and sustainable future for all.

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