



ECONOMIC EMPOWERMENT OF WOMEN THROUGH CLIMATE MITIGATION AND ADAPTION

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Abstract

Climate change is one of the greatest ecological events of our time. Scientists continue to give dire warnings about climate change amidst major global debate about the nature and extent of climate change. While climate shocks are a universal threat, women will be affected differently, and, at least in some respects, more severely than men. Women are more likely to be employed in climate-vulnerable sectors; are primarily responsible for household and care-related chores using water and fuelwood; and are often more dependent on common property ecosystems for food and grazing that will be affected by resource shortages and unequal decision-making patterns and access rights. In agriculture, women encounter economic hardships, limited resources, and social barriers, amplifying climate change's adverse effects on their livelihoods. Food and water scarcity pose critical concerns, leading to malnutrition and health risks for women. In rural areas, energy crises force women to rely on harmful fuel sources, impacting their respiratory health, while urban settings restrict women's access to essential services. On the other hand, women and their unique knowledge and experience including their strong links to nature based production and management represent a key tool for addressing climate change and developing relevant and successful strategies for mitigation and adaptation.

This study examines the gendered component of vulnerability to climate change in India, a highly vulnerable country. This research explores how gender influences climate change sensitivity, impacts on women, and the effectiveness of adaptation measures. The study emphasizes the need for gender-responsive policies and women's participation in climate decision-making processes to build resilient communities.

Key Words: Climate Change Adaptation, Empowerment of Women, Gender Equality, Mitigation Measures, Women and Health.

Introduction

“Women play a much stronger role than men in the management of ecosystem services and food security.”

~ Achim Steiner, Former UN Under-Secretary General

Women are often in the frontline in respect to the impacts of a changing climate. Climate change has been considered as humanity's greatest challenge in the twenty-first century. Climate change is a multifaceted process with many facets. Its complexity stems from the reality that climate research is prone to ambiguity, as well as the fact that the consequences would be felt throughout generations and centuries. Climate change is a global inter-governmental complex challenge having implications for different ecological, environmental, sociopolitical, and socioeconomic disciplines. The climate problem, one of the most serious disasters of our time, is not gender-neutral. Women are disproportionately affected by climate change for a variety of reasons, including a greater reliance on natural resources for a living, a lack of participation in public decision making, and limited access to property. Climate change's negative effects can be felt in the short term through natural disasters such as landslides, floods, and storms, and in the long term through more gradual degradation of the



environment. The negative consequences of these events are already being felt in a variety of domains, including agriculture and food security; biodiversity and ecosystems; water resources; human health; human settlements and migration patterns; and energy, transportation, and industry. Women are more vulnerable to the effects of climate change than men in many of these scenarios, partly because they form the majority of the world's poor and are more reliant on natural resources endangered by climate change. Furthermore, they suffer social, economic, and political obstacles that limit their ability to cope. Women and men in developing countries' rural areas are especially susceptible since they rely heavily on local natural resources for a living. Those in charge of securing water, food, and fuel for cooking and heating confront the most difficult problems. Second, when combined with unequal access to resources and decision-making processes, limited mobility putting women in rural regions at a disadvantage when it comes to climate change. As a result, identifying gender-sensitive solutions to respond to the environmental and humanitarian problems induced by climate change is critical. Climate change scientists, academics, and policymakers have historically battled with how to make the critical links between gender, social equity, and climate change. As more statistics and study show a clear correlation, it's important to discuss the uneven effects of climate change and the connections between women's empowerment and effective global climate action. Emerging countries require climate action led by women since they are more vulnerable to climate change due to their reliance on natural resources and labor-intensive work.

Review of Literature

Climate change impacts agriculture, food security, health, water, energy, and migration, causing economic losses, droughts, and land degradation

Thiede et al. (2022) studied that Drought has direct economic impacts on women, including decreased family assets, food poverty, and poor reproductive and sexual health consequences. Women giving birth during or shortly after natural calamities are at a higher risk of severe illness from malaria, with a 50% chance of dying. Low-birth-weight children have a greater risk of subnormal development, diseases, cognition, attention, and neuromotor functioning issues.

Huang et al. (2022) found that Lack of environmental education and knowledge, outdated consumer behavior, a scarcity of incentives, a lack of legislation, and the government's lack of commitment to climate change contribute to the general public's concerns. By 2050, a 2 to 3% rise in mercury and a drastic shift in rainfall patterns may have serious consequences

Mirziyoyeva and Salahodjaev (2022) found that similar results for sustainability in a cross country analysis. Increasing the share of seats held by women in parliaments is positively and significantly related to sustainable development goals.

Ndlovu and Mjimba (2021) revealed that Women face social norms, lack of authority, unclear property rights, and time constraints, hindering diversification and improving wellbeing on farms

Symanski et al. (2021) studied that Natural and environmental disasters can be highly variable from year to year; some years pass with very few deaths before a significant disaster event claims many lives

Committee on the Elimination of Discrimination Against Women (CEDAW) (2018) recommended that "States parties should ensure that all policies, legislation, plans, programs, budgets



and other activities related to disaster risk reduction and climate change are gender responsive and grounded in human-rights based principles.” In 2017 at the annual Conference of the Parties (COP23) to the Paris Agreement, the first ever Gender Action Plan was adopted. These agreements demonstrate the international recognition of the differentiated impacts of climate change on men and women.

The Intergovernmental Panel on Climate Change (IPCC) (2015) argues that “human influence on the climate system is clear, and recent anthropogenic emissions of green-house gases are the highest in history.” Climate change includes both incremental changes such as droughts and sea level rises and catastrophic events such as bushfires, floods, and other disasters. Frequency and intensity of extreme weather and climate events caused by the anthropogenic impacts of climate change include extreme temperatures (heat waves and cold weather), droughts, cyclones, coastal erosion, acidity of oceans, wildfires, heavy precipitation and flooding, and high sea levels which lead to significant vulnerability and exposure for natural and human ecosystems

Denis (2008) emphasizes that the focus is on a matrix of power relations and the need to have concurrent analyses of multiple, intersecting sources of subordination/oppression. Structural forms of intersectionality refer to the ways in which individuals with intersecting identities find themselves marginalized because of structural barriers (language, gender, governance, institutions, poverty, and citizenship). Structural intersectionality is contextual and dynamic.

Simelton and Ostwald (2019) States that men and women have differentiated access to the means of production. There is gender inequality globally in the distribution of assets, services, information, for example, secure and adequate land, credit, employment, mobility, climate and market information, access to markets, education and training, information and communication technologies, economic support services, and other resources

World Bank (2015) explained that in agriculture, where women are dependent on for livelihoods, the World Bank identified lack of land ownership, or long-term user rights, access to agricultural credit, access to productive farm inputs, access to timely labor, support from extension and advisory services, access to markets and market information, and access to weather and climate information

Norgaard & York (2005) found that women’s empowerment and advancing gender equality can lead to more environmentally friendly decision-making at household and national levels as countries with high representation of women in parliament are more likely to ratify international environment treaties

Objectives of the Study

This study examines the gendered component of vulnerability to climate change in India, a highly vulnerable country. The study emphasizes the need for gender-responsive policies and women's participation in climate decision-making processes to build resilient communities.

Research Methodology

The Data required for the study has been collected from secondary sources. This paper is basically descriptive and analytical in nature. In this paper an attempt has been taken to analyze the economic empowerment of women through climate mitigation and adaptation. The data required for the study is mainly collected from secondary source such as newspapers, magazines, journals, articles, annual reports, periodicals, Government reports, regulatory publications and related planning documents, websites etc.



Climate Change and Women's Experience

Women make about 80 percent of those displaced by climate change worldwide. Women in India's rural and urban areas are affected by climate change in major but varied ways. In rural places, for example, gathering water for drinking and household needs is predominantly the job of women. According to Uthara Narayanan, the founder of Buzz Women, an organization that gives rural women with access to knowledge, skills, and equipment, decreasing groundwater resources have become a source of mental stress for women. They are constantly worried about where to get water from and the money spent on acquiring it for their families and for agriculture, and having to ration water usage. Excessive and unusual rainfall in some sections of the country has resulted in crop losses and resultant debt in the last two years, adding to their stress. Women in metropolitan areas endure similar emotional stress as a result of warmth and waterlogging, two of the most visible effects of climate change in cities. During the monsoon season, densely populated metropolitan areas, particularly slums, face frequent and severe floods. Toilets are occasionally made unusable in such settings due to a lack of suitable infrastructure. While men can still relieve themselves outside, it is frequently harder for women to do so.

Impact of Climate Change on Women

Global observed and expected climate changes for the twenty-first century, as well as global warming, are important global changes that have occurred over the last 65 years. Climate change is a "threat multiplier," which means that it exacerbates social, political, and economic pressures in vulnerable and conflict-affected areas. Women and girls are increasingly vulnerable to all sorts of gender-based violence as a result of climate change, including conflict-related sexual violence, human trafficking, child marriage, and other forms of abuse. Due to long-standing gender inequities that have caused gaps in information, mobility, decision-making, and access to resources and training, women are less likely to survive and more likely to be wounded when catastrophes occur. Women and girls are less able to receive relief and support in the aftermath, further jeopardising their livelihoods, wellbeing, and rehabilitation and creating a vicious cycle of susceptibility to future catastrophes. Climate change and catastrophes damage women's and girls' health by limiting access to services and health care and raising hazards associated with maternal and child health. According to research, excessive heat increases the risk of stillbirth, and climate change is hastening the development of vector-borne illnesses such as malaria, dengue fever, and the Zika virus, all of which are associated with poor maternal and newborn outcomes. Climate change, environmental degradation, and natural disasters have an uneven influence across Asia and the Pacific region. Women and marginalised groups have fewer accesses to information, resources, funding, and technology, making it more difficult for them to cope and rebuild after a catastrophe. They are also underrepresented in decision-making linked to climate change, energy transition, and disaster risk reduction (DRR). Women have the potential to be great change agents. Governments, development partners, the commercial sector, finance institutions, civil society groups, and local communities must all work together quickly to achieve this. Without their participation, representation, and leadership, climate emergency solutions and responses will continue to marginalise their needs and damage their rights.

Empowering Women in Agriculture

Climate change and environmental degradation pose a significant danger to poverty reduction and SDG achievement. They have an impact on people's health, food security, nutrition, production, and profitability. Women, however, are not only well prepared to discover ways to prevent further deterioration and adapt to the changing environment because of their traditional roles in agricultural production and as procurers of water, cooking fuel, and other family resources; they also have a vested



interest in doing so. Climate change is likely to spur significant investment in clean technologies, more resilient infrastructure, and disaster prevention and mitigation facilities, as well as incentives for innovation in a variety of sectors ranging from industry to agriculture (e.g., weather-resistant crops). Empowering women in agriculture can also help with climate adaptation. We can promote more sustainable farming and conservation practices by providing adequate technologies and resources. Furthermore, by eliminating poverty, we can assist individuals in better adapting to the effects of climate change. Such investments could enhance aggregate demand for a broader range of products and services, create new employment, and boost productivity. Challenges and economic shocks bring with them possibilities to engage in corrective behaviour that can shift the globe on a higher, more sustainable course. Women are typically in charge of providing basic nutrition for their families, but they rarely have access to or control over the resources needed to do so when farming conditions deteriorate. As a result, crop failure caused by climate change jeopardises the food security of the entire population (Denton 2002). Women, above all, lack land rights, ownership rights to means of production, technology, financing, knowledge, and training, such as in climate adaptation and disaster avoidance (Rodenberg 2009).

Gender-Specific Impact

Poor social groups, in general, face the brunt of climate change, not only because they rely more on natural resources, but also because they lack the necessary capacity to adapt to climate change. Women account for around two-thirds of the world's poor, emphasising their higher vulnerability to climate change. Climate change affects men and women differently because of social conventions, conventional roles, and distinct power structures (Schalatek 2009). Climate change has major implications for food security in four dimensions: food availability, food accessibility, food utilisation, and food system stability. Depending on the location, women farmers currently account for 45-80% of total food production in developing countries. Agricultural employment employs over two-thirds of the female labour population in developing nations, and more than 90 percent in certain African countries. Traditional food sources become more unreliable and scarce as a result of climate change. Women confront income and harvest losses, which are frequently their primary sources of food and revenue. Food price hikes make food more unavailable to the poor, particularly women and girls, whose health has been shown to deteriorate faster than male health during periods of food scarcity. Furthermore, women are frequently excluded from decision-making on land access and resource use that is crucial to their livelihoods. For these reasons, it is critical that rural women's rights to food security, nondiscriminatory access to resources, and fair participation in decision-making processes be protected.

Gender-Specific Adaptation

Gender concerns in medium- and long-term adaptation can help ensure that adaptation is effective and feasible on the ground. It can help to ensure that adaptation activities do not exacerbate inequalities and other vulnerabilities that it meets the specific needs of the most vulnerable, and that men and women participate equally in the decision-making and implementation phases of these activities. Women can participate as change agents at various stages of the adaptation process. Adaptation, on the other hand, is the ability to actually shift structure, functioning, and organisation by relying on long-term sustainable actions that are directed towards livelihood security, use resources efficiently, are supported by planning and reflection, and involve institutional change. Adaptation is dependent on the resilience of the impacted people and communities, with resilience referring to people's and communities' ability to absorb change in a good way. Moving from coping to adaptation methods is heavily dependent on how resilient individuals feel, how risky change appears to be, how safe



conventional behaviours appear to be, and the institutional supports provided to help people navigate what are effectively uncertain change processes. Typically, women are in charge of collecting water and fuel (e.g., firewood) for the home. The shortage of these resources caused by climate change increases a woman's workload and time poverty, already burdened by the numerous responsibilities they must play. As a result, they have little time for income-generating activities, education, training, or community decision-making procedures. Overall, climate change exacerbates existing economic and social gender gaps.

Gender-Specific Mitigation

Women's contributions to mitigation efforts should not be underestimated. Developing countries have the ability to cut or store greenhouse gases, especially in areas where women are already involved. As a result, producing energy for the household is typically a woman's responsibility, and she frequently resorts to the energy-inefficient open burning of biomass, such as firewood. The implementation of efficient energy systems in the home could cut emissions while also utilising the potential of women as mitigation actors. The forests give crucial products to women, and they are used not just to gather firewood, but also to obtain other raw materials, food, and medicinal plants in order to provide for their family and increase their income. Forest conservation and care, combined with replanting and afforestation for which women are responsible, helps to reduce deforestation-related emissions and leads to better sequestration of greenhouse gases from the environment. As a result, women make a direct contribution to climate mitigation. Given their importance in mitigation and adaptation efforts, women must be included in the appropriate measures.

Impact of Climate Change in Low-Income Countries

- Women across the world face severe risks to their health, safety, and quality of life.
- **Dependence-** Women in developing and less developed countries are more vulnerable to climate change because of their dependence on natural resources and labour-intensive work.
- **Poverty-** Women are more likely to live in poverty than men, one of the variables that makes them more susceptible to the effects of climate change.
- **Responsibility-** It is because women from low-income households are more at risk because they are more responsible for food, water, and other homely unpaid work.
- **Regional divide-** Due to the climate crisis, more time and effort are needed to obtain basic necessities.
- Rural women often shoulder the burden of ensuring access to clean water, adequate cooking fuel, and nutritious food for their families.
- **Health risk-** Women may be at increased risk for health and safety because they must travel long distances every day to collect water and fuel.
- **Inadequate rainfall-** Turkana County is one of the most arid areas of Kenya.
- Women not only struggle to collect enough water, but when food is scarce, they eat less than men.
- **Climate vulnerable jobs-** Women in low-income countries engage in climate-vulnerable occupations such as farming and other labour-intensive work.
- **Low asset-** Despite being the backbone of the food production system, women own only about 10% of the land used for farming.
- **Climate refugees-** A McAllister (2023) study has highlighted how there could be 1.2 billion climate refugees by 2050.



Need of Women to Leed Climate Action

- **Foster SDG-** Organisation for Economic Co-operation and Development (OECD) has said that gender equality and environmental goals are mutually reinforcing that will accelerate the SDGs achievement.
- **Global challenge-** Its impact is one that has profound consequences for humans and has emerged as one of the biggest global challenges in recent decades.
- **Loss of work hours-** As per International Labour Organization (ILO) study in 2019, around 2.2 % of total working hours worldwide will be lost to high temperatures, a productivity loss equivalent to 80 million full time jobs in 2030.
- **Women at disadvantage-** United Nations highlighted that across genders, women are considered to be highly vulnerable and disproportionately affected by climate change than men.

Conclusion

Climate change disproportionately affects women, yet they are the world's best bet in the fight for a clean, healthy, and sustainable planet. The discussion of the potential and problems connected with the joint pursuit of the objectives of climate mitigation and adaptation, as well as economic empowerment of women, has demonstrated that the concerns can be successfully combined in specific sectors of climate-related projects. Local knowledge and contextual awareness of women are key tools for creating and distributing adaptation measures that will be successful and widely embraced in their communities. Furthermore, the demand for creative techniques is a potential for the growth of entrepreneurship, particularly among women. Promoting women's skill development and providing assistance to women-owned enterprises would significantly improve their ability to respond to climate change. Women's economic empowerment will need to focus on how women may be empowered in climate change adaptation and resilience as a continuum, interconnected with current development challenges such as access to dependable water, health, and livelihoods. In response to climate change risk reduction, resilience, and adaptation, there is a strong need for economic and development agendas to work together.

References

1. A. Dilawar et al. (2022) Development of a GIS based hazard, exposure, and vulnerability analyzing method for monitoring drought risk at Karachi, Pakistan Geomatics, Nat. Hazards Risk
2. Alvina Erman Sophie Anne De Vries Robbe, Stephan Fabian Thies, Kayenat Kabir, and Mirai Maruo. (2021) *Gender dimensions of disaster risk and resilience: Existing evidence* World Bank
3. S. Ashraf et al. (2021), Anthropogenic drought dominates groundwater depletion in Iran Sci. Rep.
4. Z. Oyetunde-Usman et al. (2021), Determinants of adoption of multiple sustainable agricultural practices among smallholder farmers in Nigeria Int. Soil Water Conserv. Res.
5. M.M. Blakstad et al. (2020), Climate change worsens global inequity in maternal nutrition Lancet
6. M. Alston et al. (2020), Gender and climate change: a review of impacts, gender-differentiated vulnerabilities, and gender-based adaptation and mitigation action Climatic Change
7. S. Dickin et al. (2020) Women's vulnerability to climate-related risks to household water security in centre-east Burkina Faso. Clim. Dev.
8. F. Denton et al. (2020) Gender, climate change, and adaptation: introduction World Dev.



9. E.L. Achandi et al. (2018), Women's access to agricultural technologies in rice production and processing hubs: a comparative analysis of Ethiopia, Madagascar and Tanzania *J. Rural Stud.*
10. J. Fanzo *et al.* (2018) The effect of climate change across food systems: Implications for nutrition outcomes *Global Food Security*
11. N.K. Denzin et al. (2018) *The SAGE Handbook of Qualitative Research*
12. J.W. Creswell et al. (2017) *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*
13. J. Behrman et al. (2016), Effects of the 2010 Haiti earthquake on women's reproductive health *Stud. Fam. Plann.*
14. L. Birt et al. (2016), Member checking: a tool to enhance trustworthiness or merely a nod to validation? *Qual. Health Res.*
15. M. Daoud (2016) Gender, climate change, and adaptive capacity: lessons from pastoralist communities in Kenya *Gend. Dev.*
16. N.J. Chanamuto et al. (2015) Gender equality, resilience to climate change, and the design of livestock projects for rural livelihoods *Gender & Development*
17. G. Fink *et al.* (2015), Health and agricultural productivity: evidence from Zambia *J. Health Econ.*
18. V. Weiler et al. (2014), Handling multi-functionality of livestock in a life cycle assessment: the case of smallholder dairying in Kenya *Curr. Opin. Environ. Sustain.*
19. E.M. Davis *et al.* (2012) childbearing, stress and obesity disparities in women: a public health perspective *Matern. Child Health J.*
20. H. Djoudi *et al.* (2011) Is adaptation to climate change gender neutral? Lessons from Communities dependent on livestock and forest in northern Mali *Int. For. Rev.*
21. S.E. Bell et al. (2010) Coal, identity, and the gendering of environmental justice activism in central Appalachia *Gend. Soc.*
22. L.M. Fry *et al.* (2010) Quantifying health improvements from water quantity enhancement: an engineering perspective applied to rainwater harvesting in West Africa *Environ. Sci. Technol.*
23. P.G. Jones et al. (2009), Croppers to livestock keepers: livelihood transitions to 2050 in Africa due to climate change *Environ. Sci. Pol.*