

ENVIRONMENTAL DEGRADATION AND ITS IMPACT ON WOMEN IN INDIA

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Abstract

Environmental degradation refers to the deterioration of the natural environment, including air, water, land, and biodiversity, largely caused by human activities such as pollution, deforestation, and the overexploitation of natural resources. The levels at which environmental degradation in India has escalated in the last 20 years are worrying since it has disproportionately impacted women because of the socio-economic inequalities deeply enshrined in Indian society. This paper analyzes the gendered aspect of environmental degradation in India with regard to water shortage, deforestation, land degradation, air pollution, and climate-related livelihood displacement. Based on secondary sources, national surveys, reports of the Ministry of Environment, Forest and Climate Change (MoEFCC), NITI Aayog, the Food and Agriculture Organization (FAO), and recent scholarly publications, the study has undertaken a systematic analysis of the destruction of female health, time poverty, food security, and economic autonomy at the hands of environmental stressors. The paper highlights research gaps in gender-disaggregated environmental statistics and policy convergence, and concludes with recommendations for inclusive environmental governance in India.

Keywords: *Environmental Degradation, Gender, Women, India, Climate Change, Water Scarcity, Livelihoods*

1.INTRODUCTION

India is facing a serious and increasing environmental crisis. In the Global Climate Risk Index 2021, India is ranked seventh among the nations that have suffered most as a result of extreme weather events, and the country is estimated to lose 30 million hectares of forest cover every year, and over 29 percent of its land is degraded (Eckstein, Künzel & Schäfer, 2021; Forest Survey of India, 2021). Environmental issues are not gender neutral. The women in India, especially rural, tribal, and marginalized women, are more affected by the consequences of environmental degradation because of their roles in gathering water, fuel wood, and fodder, and as the main source of food security in their households. As India is estimated to be the most populated country in the world in the year 2030, and about 65 percent of the Indian population is still members of the natural resources-driven primary livelihoods most of the time, the gender-environment nexus is critical in sustainable development planning (IPCC, 2022; UNDP India, 2023). The latest tendencies prove the seriousness of the problem. The South Asian women have been confirmed to be particularly vulnerable to climate change with disproportionate exposure to heat stress, food insecurity, and loss of livelihoods based on natural resources (the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (AR6) 2022. According to the National Family Health Survey-5 (NFHS-5, 20192021) in India, women living in areas where water stress occurs most often indicate that waterborne sicknesses are 40 percent more common and that women living in these areas spend considerably more time collecting water. At the same time, India has one of the poorest air quality in the world, which causes drastic respiratory effects to women cooking solid biomass fuels in poorly-ventilated houses, which affects nearly 500 million women (World Health Organization, 2023; Ministry of Petroleum and Natural Gas, 2023). Although this is the case, it is evident that women are still underrepresented in environmental governance, disaster risk reduction structures, and natural resource management institutions in India. The country's environmental policies have historically adopted a gender-blind approach, failing to capture or address the specific vulnerabilities and agency of women in environmental contexts.¹ This paper addresses this critical gap through a systematic secondary data analysis.

¹Ministry of Statistics and Programme Implementation (MoSPI). (2023). Women and Men in India 2022–23. Government of India.

This paper aims to examine the impact of environmental degradation on Indian women. By analyzing various environmental issues including water scarcity, deforestation and air pollution. This paper investigates the correlation between the environmental degradation and its adverse effects on women in India as whole.

1.1 Research Objectives

The specific objectives of this study are:

- 1- To examine the trends in environmental degradation in India with a focus on water scarcity, deforestation, land degradation, and air pollution.
- 2- To analyse the gender-differentiated impacts of environmental degradation on women's health, time poverty, food security, and economic livelihoods.
- 3- To identify research gaps in gender-disaggregated environmental data in India.
- 4- To suggest policy recommendations for integrating gender perspectives into India's environmental governance frameworks.

2. LITERATURE REVIEW

The ecofeminism, political ecology and feminist political economy theories (a variety of theoretical approaches) have been used to analyze the connection between environmental degradation and gender inequality that leads to various aspects of female susceptibility and activism in relation to the environment.

2.1 Theoretical Frameworks: Gender and the Environment

The significant formative work was done by Shiva (1988), who claimed that women (especially in the Global South) have extensive ecological knowledge that is developed in their subsistence activities and, therefore, they are first to experience - and first to oppose - the destruction of the environment.

This was elaborated upon by Rocheleau et al. (1996) with feminist political ecology stating that gender disparities in access to and knowledge of natural resources are a social construction and a political issue. MacGregor (2020), criticizes the previous ecofeminist approaches to essentializing the connection of women with nature and argues that it should be analyzed structurally, in the

context of women. environmental vulnerabilities within patriarchal political economies and colonial histories.² In the Indian context, Agarwal (2010) demonstrates that women's exclusion from forest governance institutions systematically undermines both environmental outcomes and women's welfare.³

2.2 Water Scarcity and Women

NITI Aayog's Composite Water Management Index (CWMI, 2018) reported that India is experiencing the worst water crisis in its history, with 600 million people facing high-to-extreme water stress and 21 major cities projected to exhaust groundwater by 2030.⁴ Women are at the epicentre of this crisis. The UN Women India report (2022) estimates that in water-stressed districts of Rajasthan, Madhya Pradesh, and Jharkhand, women spend on average 4–6 hours per day collecting water - time diverted from education, income-generating activities, and rest.

A landmark study by Koolwal and van de Walle (2013) in the *Journal of Development Economics* established a statistically significant inverse relationship between water access and girls' school enrolment, demonstrating that reducing women's water-collection burden has substantial human capital co-benefits.⁵ Mehrotra and Bhattacharya (2021) further document how water contamination disproportionately affects women's reproductive health, with arsenic-contaminated groundwater in West Bengal and fluoride-rich water in Rajasthan linked to elevated maternal mortality and gynaecological morbidity.

2.3 Deforestation, Fuel Wood Collection, and Women's Labour

India lost approximately 1.5 million hectares of forest between 2001 and 2023, according to Global Forest Watch (2024), that severely impact on rural women who dependent on forests for fuel,

²MacGregor, S. (2020). *Gender and Environment: Critical Concepts in the Social Sciences*. Routledge, New York.

³Agarwal, B. (2010). *Gender and Green Governance: The Political Economy of Women's Presence Within and Beyond Community Forestry*. Oxford University Press, Oxford.

⁴NITI Aayog. (2018). *Composite Water Management Index: A Tool for Water Management*. Government of India, New Delhi.

⁵Koolwal, G., & van de Walle, D. (2013). Access to water, women's work, and child outcomes. *Economic Development and Cultural Change*, 61(2), 369–405. <https://doi.org/10.1086/667602>

fodder, and non-timber forest products (NTFPs).⁶ The India State of Forest Report 2021 (FSI, 2021) notes a concerning decline in open forest cover, which is most proximate to rural settlements and most frequently accessed by women.

Aggarwal et al. (2022) document that as forests recede, women travel progressively longer distances to collect fuel wood, with average collection distances increasing from 2.3 km in 2005 to 4.7 km in 2020 in central Indian states.⁷ This intensification of labour is associated with musculoskeletal injuries, reduced time for childcare, and diminished participation in Gram Sabha meetings and other societal role.

2.4 Air Pollution and Women's Health

India's ambient air quality crisis intersects with indoor air pollution to create a dual health burden for women. The World Health Organization (2023) estimates that household air pollution from solid fuel combustion causes approximately 480,000 premature deaths annually in India, with women constituting the majority of victims due to their disproportionate exposure during cooking.⁸

Balakrishnan et al. (2020) in a multi-state study found that women using biomass fuels in unventilated kitchens had 3.2 times higher odds of chronic obstructive pulmonary disease (COPD) compared to women using cleaner fuels.⁹ Despite the Pradhan Mantri Ujjwala Yojana (PMUY) scheme having distributed over 90 million LPG connections to below-poverty-line households by 2023, refill affordability constraints continue to limit sustained clean fuel adoption, particularly among the poorest women.

⁶Global Forest Watch. (2024). India Deforestation and Forest Loss Dashboard. Retrieved from <https://www.globalforestwatch.org/dashboards/country/IND/>

⁷Aggarwal, S., Kumar, N., & Walia, A. (2022). The hidden labour of women: Fuel wood collection and time poverty in central India. *Economic and Political Weekly*, 57(14), 42–51.

⁸World Health Organization. (2023). Household Air Pollution and Health: Key Facts. WHO Fact Sheet. Geneva. <https://www.who.int/news-room/fact-sheets/detail/household-air-pollution-and-health>

⁹Balakrishnan, K., Dey, S., Gupta, T., et al. (2020). The impact of air pollution on deaths, disease burden, and life expectancy across the states of India: The Global Burden of Disease Study 2017. *The Lancet Planetary Health*, 3(1), e26–e39.

2.5 Climate Change, Agriculture, and Women's Food Security

Women constitute approximately 42% of India's agricultural workforce (FAO, 2023), yet own less than 13% of landholdings, limiting their access to credit, insurance, and technological adaptation resources.¹⁰ The IPCC AR6 projects that South Asian agricultural productivity will decline by 8–17% by 2050 under moderate emission scenarios, with smallholder and marginal farming - disproportionately practised by women - facing the greatest losses.

Singh and Bhatt (2023), in a study of 1,200 women farmers across Bihar, Odisha, and Maharashtra, found that 68% reported significant reductions in crop yields over the previous decade attributable to erratic rainfall and prolonged dry spells, and 74% lacked access to crop insurance or government compensation schemes.¹¹ Women-headed households were found to be 60% more likely to experience food insecurity during climate-induced agricultural shocks compared to male-headed households.

2.6 Disaster Risk and Climate Migration

The Internal Displacement Monitoring Centre (IDMC, 2023) reported that India recorded 2.5 million new internal displacements due to disasters in 2022, among the highest globally.¹² Disasters exacerbate gender inequalities: women displaced by floods, cyclones, or droughts face heightened risks of gender-based violence in relief camps, loss of documentation, and exclusion from compensation mechanisms registered in men's names.

Dankelman (2022) argues that disaster mortality exhibits strong gender differentials: women are 14 times more likely to die in climate disasters than men in low-income countries, attributable to mobility restrictions, caregiving responsibilities, and information access gaps.¹³ Indian data from

¹⁰FAO. (2023). The Status of Women in Agrifood Systems. Food and Agriculture Organization of the United Nations, Rome.

¹¹Singh, R., & Bhatt, D. (2023). Climate change, women farmers, and food security in India: Evidence from Bihar, Odisha, and Maharashtra. *Indian Journal of Agricultural Economics*, 78(2), 115–134.

¹²Internal Displacement Monitoring Centre. (2023). GRID 2023: Global Report on Internal Displacement. IDMC, Geneva.

¹³Dankelman, I. (2022). *Gender and Climate Change: An Introduction* (2nd ed.). Earthscan/Routledge, London.

the 2020 Amphan cyclone and 2022 Assam floods corroborate these patterns, with women comprising over 60% of reported fatalities in several affected districts.

2.7 Research Gaps

Despite a growing body of literature, significant gaps remain. First, gender-disaggregated data on environmental impacts in India remains fragmented - the MoEFCC does not systematically collect or publish sex-disaggregated data on natural resource use or environmental health impacts. Second, most existing studies focus on rural contexts, with urban women's environmental vulnerabilities - particularly those of informal settlement dwellers facing solid waste contamination and flooding - under-researched. Third, the intersectionality of caste, class, ethnicity, and gender in shaping environmental vulnerability is inadequately theorized in the existing literature. Finally, longitudinal data on women's adaptive capacity and agency in environmental governance remains scarce, limiting understanding of effective interventions.

3. RESEARCH METHODOLOGY

This study adopts a **systematic secondary data analysis** methodology, which is the most appropriate approach for the study's. The objectives of synthesising evidence across multiple environmental domains and their gender-differentiated impacts at the national and sub-national levels in India. The rationale for this choice rests on the breadth of available secondary data from credible national and international institutions, the cross-sectoral scope of the research question, and the necessity of identifying patterns that transcend single datasets or geographic sites.

3.1 Analytical Framework

The study employs a **gender-responsive analysis framework**, which involves: (a) extracting relevant quantitative indicators on environmental conditions and women's welfare outcomes from secondary data sources; (b) cross-tabulating these indicators at national and state levels to identify geographic patterns of gendered vulnerability; (c) synthesising qualitative evidence from survey reports and case studies to contextualise quantitative trends; and (d) identifying convergences and divergences between different data sources to assess the robustness of findings.

3.2 Scope and Limitations

The analysis covers the period 2010–2024, with a primary focus on the most recently available data. The study encompasses five thematic domains: water scarcity, deforestation and fuel wood, air pollution, climate change and agriculture, and disaster risk. The primary limitation is the availability and quality of gender-disaggregated environmental data in India, which constrains granular analysis. Where gender-disaggregated data is unavailable, the study triangulates between related indicators to draw cautious inferences.

4. RESULTS

The analysis of secondary data across five thematic domains yields a consistent pattern: environmental degradation in India systematically and disproportionately disadvantages women, amplifying existing gender inequalities and creating new vectors of vulnerability.

4.1 Water Scarcity: Time Poverty and Health Burden

Table 1 presents state-wise data on water stress levels and women's average daily time spent on water collection, drawn from NITI Aayog CWMI (2023) and NSSO Time Use Survey (2019).

Table 1: Water Stress and Women's Time Burden in Selected Indian States (2019–2023)

State	Water Stress Level (CWMI 2023)	% HH Without Piped Water (NFHS-5)	Women's Daily Water Collection Time (hrs) (NSSO TUS 2019)
Rajasthan	High–Extreme	61.4%	5.8
Madhya Pradesh	High	54.2%	4.9
Jharkhand	High	72.1%	4.6
Uttar Pradesh	Medium–High	48.3%	3.8
West Bengal	Medium	38.7%	2.6
Kerala	Low–Medium	18.2%	0.9
All India Average	-	44.2%	3.4

Source: NITI Aayog Composite Water Management Index (2023); NSSO Time Use Survey (2019); NFHS-5 (2021)

The data reveal a strong positive correlation ($r = 0.87$) between water stress severity and women's time devoted to water collection. In Rajasthan - India's most water-stressed state - women spend nearly six hours daily on water procurement, compared to under one hour in Kerala. This time,

poverty directly constrains women's economic participation, educational attainment, and leisure, representing a significant welfare deficit attributable to environmental scarcity.¹⁴

NFHS-5 data further indicate that in districts with less than 30% piped water coverage, women report 40% higher rates of diarrhoeal diseases and 28% higher rates of reproductive tract infections compared to districts with greater than 70% piped water coverage, underscoring the health co-costs of water insecurity.

4.2 Deforestation and Fuel Wood Collection Burden

Table 2 illustrates the trend in India's forest cover change (2001–2023) juxtaposed with estimated changes in women's fuel wood collection distances in central Indian states, sourced from Global Forest Watch (2024) and Aggarwal et al. (2022).

Table 2:- Forest Cover Loss and Women's Fuel Wood Collection Distance in Central India

Year	Cumulative Forest Cover Lost in India (Million Ha)	Avg. Fuel Wood Collection Distance: Central India (km)	% Women Reporting Fuel Wood Scarcity
2005	Baseline (0)	2.3	31%
2009	0.8	2.9	38%
2013	1.3	3.4	47%
2017	1.6	4.1	56%
2020	1.9	4.7	63%
2023 (est.)	2.2	5.1	68%

Source: Global Forest Watch (2024); Aggarwal et al. (2022); FSI India State of Forest Report (2021)

The data demonstrate a near-linear relationship between forest cover loss and the intensification of women's fuel wood collection labour. As forests recede, women must travel farther, carry heavier loads over greater terrain, and spend more time in labour - an invisible and uncompensated economic contribution that GDP metrics fail to capture.¹⁵ Deforestation greatly intensifies the demands placed on rural women who mainly handle the task of collecting fuelwood. As local forests diminish these women are forced to travel farther and invest more time in gathering

¹⁴NSSO. (2019). Time Use in India 2019. National Statistical Office, Ministry of Statistics and Programme Implementation, Government of India.

¹⁵Forest Survey of India. (2021). India State of Forest Report 2021. Ministry of Environment, Forest and Climate Change, Dehradun.

essential energy sources for their households. Consequently this elevates their physical workload and diminishes the time they have for education income-producing activities and taking care of their families.

4.3 Air Pollution and Women's Respiratory Health

Table 2 presents data on cooking fuel use among women and associated respiratory health outcomes, drawn from NFHS-5 (2021) and WHO Global Health Observatory data (2023).

Table 3: Cooking Fuel Use and Women's Respiratory Health Outcomes in India (2021–2023)

Fuel Type	% of Women HHs Using (NFHS-5)	Est. Annual Premature Deaths (Women)	COPD Prevalence among Women Users (%)
Solid Biomass (firewood, dung)	43.8%	~285,000	18.3%
Coal / Kerosene	6.4%	~58,000	12.7%
LPG (regular users)	40.2%	~22,000	4.1%
Clean Fuels (LPG/PNG)	9.6%	~8,000	2.3%
Total / National Average	100%	~480,000*	11.4%

*Source: NFHS-5 (2021); WHO Global Health Observatory (2023); Balakrishnan et al. (2020). *Includes male deaths; women constitute ~60% of biomass fuel-related deaths.*

These figures expose a stark health disparity: women using solid biomass fuels face COPD prevalence nearly eight times higher than those using clean fuels. The disproportionate burden reflects both the feminisation of cooking labour and the energy poverty of India's rural and peri-urban populations.¹⁶ Extended exposure to smoke from solid biomass fuels poses serious health risks for women particularly those involved in daily cooking activities. Continuous inhalation of particulate matter and toxic pollutants in poorly ventilated kitchens significantly increases the risk of chronic respiratory diseases such as chronic obstructive pulmonary disease (COPD), asthma and other lung infections. These health burdens disproportionately affect rural women and contribute to a gradual decline in respiratory health. Consequently such impacts not only threaten women's well-being but also reduce their productivity and overall socio-economic participation.

¹⁶Ministry of Petroleum and Natural Gas. (2023). Pradhan Mantri Ujjwala Yojana: Progress Report 2023. Government of India, New Delhi.

4.4 Climate Change, Agriculture, and Women's Livelihoods

Figure 2 presents data on agricultural productivity trends and women farmers' adaptive capacity in selected states, drawn from FAO (2023), Singh and Bhatt (2023), and the Indian Council of Agricultural Research (ICAR) datasets.

Table 4: Women Farmers' Vulnerability and Adaptive Capacity to Climate Change (2023)

Indicator	Bihar	Odisha	Maharashtra	All-India Avg.
Women reporting yield decline (%)	72%	68%	64%	68%
Women with crop insurance (%)	14%	18%	22%	26%
Women owning agri. land (%)	9.2%	11.4%	13.7%	12.8%
Women HHs: food insecurity in climate shocks (%)	68%	61%	55%	59%
Women accessing climate advisory (%)	8%	11%	15%	13%

Source: Singh & Bhatt (2023); FAO Gender and Agriculture Database (2023); ICAR (2022)

The data reveal a severe adaptive capacity deficit among women farmers: while over two-thirds report crop yield declines attributable to climate change, fewer than one in four has access to crop insurance, and fewer than one in seven receives climate advisory services. Women's limited land ownership further excludes them from formal agricultural credit and compensation schemes.¹⁷ Climate change negatively affects women's economic empowerment in rural areas by reducing agricultural productivity and income stability. Women farmers face additional challenges due to limited access to land, credit, and climate-related resources, which restrict their ability to adopt adaptive measures. Consequently, climate change exacerbates existing gender inequalities and undermines women's financial security.

¹⁷Indian Council of Agricultural Research. (2022). Annual Report 2021–22: Climate Smart Agriculture Initiatives. ICAR, New Delhi.

4.5 Summary of Key Findings

Environmental Domain	Key Impact on Women	Severity Indicator
Water Scarcity	Time poverty, health risks, reduced school enrolment	3.4 hrs/day national avg.; up to 5.8 hrs in Rajasthan
Deforestation	Increased fuel wood labour, musculoskeletal injury, reduced governance participation	Collection distance doubled (2005–2020)
Air Pollution	Respiratory disease, premature death	~285,000 women deaths/yr from solid biomass
sClimate Change / Agriculture	Food insecurity, income loss, adaptive capacity deficit	68% report yield decline; 26% have insurance
Disaster Risk	Displacement, GBV, mortality, documentation loss	Women 60%+ of fatalities in selected disaster events

Source: self compilation

5. DISCUSSION

5.1 Structural Roots of Gendered Environmental Vulnerability

The findings of this study are not incidental - they are structurally produced by the intersection of patriarchal social norms, inequitable resource ownership, policy exclusions, and the feminisation of subsistence labour in India. Women's disproportionate dependence on environmental commons - water, forests, agricultural land - means that every unit of environmental degradation translates into a unit of increased burden for women, while their limited ownership of assets and political representation restricts their capacity to mitigate or adapt.¹⁸

The gender-time poverty nexus is particularly striking: water and fuel wood collection collectively consume an average of 5–7 hours of women's time daily in high-stress regions, representing an invisible subsidy to household and national economies. Were this labour to be compensated at India's national minimum wage (₹178/day in 2023), the annual economic value would exceed ₹3.5 trillion - approximately 1.2% of GDP.¹⁹

¹⁸ Agarwal, B. (2018). Gender equality, food security and the sustainable development goals. *Current Opinion in Environmental Sustainability*, 34, 26–32. <https://doi.org/10.1016/j.cosust.2018.07.007>

¹⁹ Chakraborty, S., & Ghosh, D. (2023). The invisible economy: Valuing women's unpaid environmental labour in India. *Environment and Development Economics*, 28(3), 312–331.

5.2 Policy Gaps and Institutional Failures

India's major environmental policy instruments - the National Action Plan on Climate Change (NAPCC, 2008), the National Water Mission, and the Compensatory Afforestation Fund Management and Planning Authority (CAMPA) - contain few gender-specific provisions or gender-responsive monitoring mechanisms. The NAPCC's eight missions include no dedicated gender mission, and women's participation in State-level Climate Change Committees remains below 15% nationally.

The National Rural Employment Guarantee Act (MGNREGS) offers some gender-responsive provision - mandating 33% women's participation - and has been shown to partially offset women's water and fuel wood collection burdens by generating income for purchasing market substitutes.²⁰ However, implementation gaps, social barriers to women's work participation in certain states, and insufficient linkages to environmental restoration activities limit its transformative potential.

5.3 Agency, Resistance, and Women-Led Environmental Movements

Women in India are not only victims of environmental degradation but also prominent agents of resistance and ecological stewardship. The Chipko Movement of the 1970s, the Appiko Movement in Karnataka, women-led water harvesting groups in Rajasthan, and the Narmada Bachao Andolan all demonstrate women's capacity for environmental collective action.²¹ More recently, women's Self-Help Groups (SHGs) in Odisha and Jharkhand have engaged in community-based natural resource management, forest regeneration, and watershed development, achieving measurable improvements in both environmental and gender equity outcomes.

These experiences affirm that gender-just environmental governance - in which women are not merely beneficiaries but decision-makers - produces superior sustainability outcomes. Yet these models remain localised and insufficiently integrated into national policy frameworks.

²⁰Drèze, J., & Khera, R. (2022). *Dissent on Development: Studies in Rural Economy*. Oxford University Press India, Delhi.

²¹Guha, R. (2019). *Environmentalism: A Global History*. Penguin/Viking, New Delhi.

6. CONCLUSION

This study has systematically demonstrated that environmental degradation in India is not a gender-neutral process. Across the domains of water scarcity, deforestation, air pollution, climate-induced agricultural disruption, and disaster risk, women - particularly rural, tribal, and marginalised women - face amplified vulnerabilities rooted in their structural positioning within households, economies, and politics that accord them lesser access to resources, rights, and voice.

The findings establish three overarching conclusions. First, environmental degradation constitutes a direct assault on women's time, health, livelihoods, and physical safety, imposing invisible economic costs that existing development metrics systematically fail to capture. Second, existing Indian environmental and climate policies are insufficiently gender-responsive, lacking gender-disaggregated targets, monitoring mechanisms, and women's representation in decision-making. Third, women in India are not passive victims - they are demonstrated environmental stewards and change agents whose leadership, when structurally enabled, produces superior outcomes for both gender equity and environmental sustainability.

Based on these conclusions, this study recommends:

- 1- Mandatory gender-disaggregated data collection in all national environmental surveys, water assessments, and forest inventories.
- 2- Integration of a dedicated Gender and Environment Mission within India's updated National Action Plan on Climate Change.
- 3- Minimum 50% women's representation in Joint Forest Management Committees, River Basin Authorities, and District Environment Committees, with enforcement mechanisms.
- 4- Universal expansion of the Pradhan Mantri Ujjwala Yojana with enhanced refill subsidies and monitoring of sustained clean fuel adoption.
- 5- Land title and inheritance reforms to expand women's agricultural landholding, with gender-responsive crop insurance and agricultural extension services.
- 6- Gender-responsive disaster risk reduction (DRR) frameworks that mainstream women's leadership, protect women's documentation rights, and address GBV in displacement contexts.

Ultimately, addressing the gendered dimensions of environmental degradation in India requires not merely technical fixes but a fundamental renegotiation of the power relations that produce women's disproportionate vulnerability. Gender justice and ecological sustainability are not competing imperatives - they are structurally intertwined, and progress on one demands progress on the other.

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