

# Beyond Shelters: A Gendered Approach to Disaster Preparedness and Resilience in Urban Centers

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**Abstract:-** This research explores the shortcomings of a shelter-centric approach to disaster preparedness and resilience in urban centers, particularly regarding its impact on women. It argues for a gender-integrated approach that acknowledges existing inequalities and vulnerabilities faced by women in disaster situations.

The paper begins by examining how socioeconomic factors, social norms, and poorly planned urban infrastructure disproportionately affect women's ability to prepare for and recover from disasters. It then critiques the limitations of traditional disaster response, which often prioritizes immediate shelter needs while neglecting women's long-term safety, security, and economic well-being.

Moving forward, the research proposes a framework for building gender-responsive resilience in urban contexts. This framework emphasizes inclusive planning that actively incorporates women's knowledge and perspectives. The paper also highlights the importance of targeted early warning systems and gender-sensitive infrastructure design. Additionally, it proposes strategies like livelihood support programs to foster women's economic recovery after disasters.

By exploring case studies and offering specific policy recommendations, this research aims to empower stakeholders - city planners, disaster management agencies, and NGOs - to create more equitable and inclusive practices. These practices will ultimately strengthen the resilience of urban communities by enabling all residents, particularly women, to effectively prepare for, respond to, and recover from disasters.

## I. INTRODUCTION

In the aftermath of the catastrophic 2018 Kerala floods, a concerning pattern emerged. Data revealed that women constituted a staggering 70% of those seeking refuge in relief camps. This statistic underscores the disproportionate impact of urban disasters on women in India. While the overall devastation affected all residents, women faced unique challenges due to a complex interplay of factors.

Limited access to resources plays a significant role in this disparity. Women in urban areas, particularly those living in poverty or informal settlements, may have restricted access to information about impending disasters, financial resources to prepare emergency kits, or secure transportation to evacuate during emergencies. Societal norms further exacerbate the situation. Cultural expectations that restrict women's mobility, particularly at night, can hinder their ability to reach safe havens during a disaster. Additionally, inadequate infrastructure in urban areas, such as poorly lit streets or lack of gender-segregated sanitation facilities in relief camps, can pose significant security risks for women.

This research paper argues that the current, shelter-centric approach to disaster management in Indian cities fails to adequately address these gender-specific vulnerabilities. Moving forward, a gender-responsive framework for disaster preparedness and resilience is crucial. This framework would acknowledge existing inequalities and actively integrate women's knowledge and perspectives into all phases of disaster management – from preparedness and early warning systems to response and recovery efforts. By empowering women to become active agents in building safer and more resilient communities, we can create a more equitable future for all residents of Indian cities in the face of disasters.

## II. BACKGROUND: GENDER AND DISASTER VULNERABILITY IN INDIAN CITIES

Disasters, both natural and man-made, pose a significant threat to urban communities across India. However, the impact of these events is not equally distributed. Women in Indian cities often face greater vulnerability compared to men, highlighting the complex relationship between gender and disaster risk. This section delves into the key factors contributing to this disparity.

➤ *Socioeconomic Disadvantage:*

- **Limited Access to Resources:** Women, particularly those residing in slums or informal settlements, often have lower incomes and limited access to resources like education, information dissemination channels, and financial security. This makes it difficult for them to invest in preparedness

measures like emergency kits or safe housing, further increasing their vulnerability.

- **Informal Work:** A significant portion of the urban workforce in India, especially women, are engaged in informal sectors with minimal job security and social safety nets. These jobs often lack disaster preparedness training or evacuation plans, leaving women exposed during emergencies.

➤ *Social Norms and Power Dynamics:*

- **Mobility Restrictions:** Cultural norms in some parts of India can restrict women's mobility, particularly at night. During disasters that necessitate evacuation, these restrictions can delay their escape or limit their access to safe havens, especially if they are far from their homes.
- **Decision-Making Power:** Women are often underrepresented in disaster management committees and community decision-making processes. Their voices and needs may not be adequately accounted for during preparedness planning, leading to strategies that fail to address their specific vulnerabilities.

➤ *Inadequate Infrastructure:*

- **Poor Lighting:** Many urban areas in India lack proper street lighting, especially in informal settlements. This lack of illumination creates security risks for women who need to evacuate at night or use public spaces during power outages after disasters.
- **Sanitation Facilities:** Inadequate sanitation facilities, particularly the lack of gender-segregated restrooms in relief camps, can pose a significant health and safety risk for women during disasters. This can limit their mobility and access to basic hygiene needs, leading to increased vulnerability to infections and diseases.

➤ *The Intersection of Factors:*

It's important to understand that these factors often intertwine to create a magnified impact. For instance, limited access to financial resources can make it difficult for women to invest in sturdy housing, which in turn, becomes more susceptible to damage during disasters. Additionally, social norms restricting mobility might be further exacerbated during chaotic evacuation situations.

By acknowledging these gender-specific vulnerabilities, policymakers and disaster management agencies can develop more equitable and inclusive strategies for building disaster resilience in Indian cities. This paves the way for a future where all residents, regardless of gender, have the tools and resources they need to prepare for, respond to, and recover from disasters.

This research paper argues that a fundamental paradigm shift is necessary in disaster management practices for Indian cities. Moving beyond a shelter-centric approach, a gender-responsive framework is crucial for building more equitable

and resilient urban communities. This framework requires actively integrating women's voices and experiences into all phases of disaster management – from preparedness and early warning systems to response and recovery efforts. By acknowledging existing gender inequalities and empowering women to become active agents in building disaster resilience, Indian cities can create a future where all residents are equipped to face the challenges of natural and man-made disasters.

### III. GENDER AND URBAN VULNERABILITY

➤ *Socioeconomic Factors:*

Limited access to education, employment, and resources creates a cascade effect that significantly increases women's vulnerability in Indian cities during disasters. Here's a breakdown of how these factors contribute:

- **Education:** Lower literacy rates among women can hinder their ability to understand disaster preparedness information disseminated through official channels. This includes early warning systems, evacuation procedures, and safety protocols. Limited education also restricts access to skilled jobs with higher incomes, making it difficult for women to invest in preparedness measures like sturdy housing or emergency supplies.
- **Employment:** A significant portion of the urban female workforce in India is engaged in informal sectors like street vending or domestic work. These jobs often lack formal disaster preparedness training or evacuation plans. Additionally, the precarious nature of informal work means women may not have the financial resources to invest in preparedness measures or rebuild their livelihoods after a disaster.
- **Resources:** Financial limitations are a major barrier for women in urban slums and informal settlements. Limited access to credit makes it difficult to invest in disaster-resilient housing or emergency kits. Additionally, women might have limited control over household finances, further restricting their ability to prepare for disasters.

➤ *Social Norms and Expectations:*

Cultural norms in some parts of India can significantly hinder women's preparedness efforts:

- **Mobility Restrictions:** Social norms restricting women's mobility, particularly at night, pose a major challenge during disasters. These restrictions can delay evacuation, limit access to safe havens, or prevent them from seeking critical resources like medical aid. The fear of societal censure can also discourage women from venturing out during emergencies, even when their safety is at risk.
- **Decision-Making Power:** Women are often underrepresented in disaster management committees and community decision-making processes. Their voices and needs may not be adequately considered during preparedness planning. This can lead to strategies that fail to address specific vulnerabilities, such as the need for

gender-segregated sanitation facilities or safe evacuation routes in crowded neighborhoods.

➤ *Urban Infrastructure:*

Poorly planned infrastructure in Indian cities disproportionately affects women's safety and well-being during disasters:

- **Lighting:** Inadequate street lighting, especially in informal settlements, creates a major security risk for women who need to evacuate at night or use public spaces during power outages after disasters. The lack of illumination can make them vulnerable to violence and hinder their ability to navigate safely.
- **Sanitation:** The lack of adequate sanitation facilities, particularly the absence of gender-segregated toilets in relief camps, creates a significant health and safety risk for women. This can limit mobility due to hygiene concerns and increase vulnerability to infections and diseases. Additionally, a lack of privacy in overcrowded camps can contribute to mental stress and discomfort.

By addressing these socioeconomic factors, social norms, and infrastructure issues, Indian cities can create a more equitable and inclusive environment for disaster preparedness and resilience. This will ultimately empower women to become active agents in building safer and more sustainable communities.

#### IV. LIMITATIONS OF SHELTER-CENTRIC APPROACH IN INDIAN CITIES

While providing emergency shelter remains a crucial aspect of disaster response, a solely shelter-centric approach in Indian cities presents significant limitations, particularly regarding its impact on women. Here's a closer look at these shortcomings:

➤ *Neglect of Long-Term Needs:*

Traditional shelter responses often focus on immediate needs like providing a roof overhead and basic food rations. However, they often neglect women's long-term needs that are vital for their safety, dignity, and well-being during displacement.

- **Childcare:** Shelters may lack dedicated spaces or adequate resources for childcare, leaving women burdened with caring for children amidst the chaos and disruption.
- **Sanitation Facilities:** The lack of gender-segregated sanitation facilities in shelters can pose a significant health and safety risk for women. This can lead to privacy concerns, limit mobility due to hygiene needs, and increase the risk of infections and diseases. Furthermore, inadequate sanitation facilities can contribute to a sense of insecurity and discomfort.

- **Protection from Violence:** Overcrowded shelters without proper security measures can leave women vulnerable to violence and harassment. This is particularly concerning for women who may have experienced domestic violence before the disaster.

➤ *Gender-Blind Design:*

The design of shelters often fails to consider the specific needs and vulnerabilities of women:

- **Privacy:** Shelters may not provide adequate privacy partitions or sleeping areas, especially for single women or families. This lack of privacy can be culturally insensitive and lead to discomfort and distress.
- **Security:** Inadequate lighting and security measures within shelters can heighten women's fear of violence and harassment, especially during nighttime hours.
- **Cultural Sensitivities:** Shelters might not cater to cultural practices related to menstruation or religious observances, causing additional stress and discomfort for displaced women.

➤ *Overlooking Livelihoods:*

Disaster response efforts often focus on providing food and basic necessities but neglect the economic impact on women, particularly those engaged in informal work:

- **Loss of Income:** Disasters can disrupt informal markets and employment opportunities, leaving women without the means to earn a living and support their families.
- **Lack of Livelihood Recovery Programs:** Response programs rarely prioritize supporting women to restart their businesses or find new income opportunities in the aftermath of a disaster. This prolongs their vulnerability and hinders their ability to recover financially.

By acknowledging these limitations of the shelter-centric approach, Indian cities can adopt a more gender-responsive disaster management strategy. This will ensure that shelters cater to women's specific needs and that recovery efforts address their economic vulnerabilities, leading to a more equitable and sustainable future for all residents.

#### V. BUILDING GENDER-RESPONSIVE RESILIENCE

Moving beyond the limitations of a shelter-centric approach, a crucial step towards building disaster-resilient Indian cities is adopting a gender-responsive framework. This framework emphasizes strategies that actively consider the needs, experiences, and knowledge of women in all phases of disaster management. Here are key components to consider:

➤ *Participatory Planning:*

Traditional disaster risk reduction (DRR) planning often excludes women's voices. A gender-responsive approach advocates for inclusive planning processes that actively involve women from diverse backgrounds in decision-making:

- **Community Committees:** Include women in local disaster management committees and encourage their participation in risk assessments, preparedness planning, and resource allocation.
- **Focus Group Discussions:** Organize focus group discussions with women from different communities to understand their specific vulnerabilities and gather insights for planning.
- **Knowledge Sharing:** Recognize and leverage the traditional knowledge and coping mechanisms women possess regarding disasters, particularly in local contexts.

By actively including women in planning processes, Indian cities can develop DRR strategies that are more effective and inclusive, ultimately strengthening community resilience.

➤ *Early Warning Systems:*

Effective early warning systems are crucial for preparing for and responding to disasters. However, traditional systems may not reach or resonate with women in the most vulnerable communities. Here's how to create more accessible and targeted early warnings:

- **Multilingual Alerts:** Disseminate early warnings through multiple channels, including local languages, community radio broadcasts, and text messages to ensure information reaches women with limited literacy or those who primarily rely on spoken languages.
- **Door-to-Door Campaigns:** Complement technological alerts with door-to-door campaigns in high-risk areas, particularly slums and informal settlements, to ensure women receive timely and clear evacuation instructions.
- **Women as Messengers:** Identify and train women as community leaders to disseminate crucial information and mobilize their communities during emergencies.

By tailoring early warning systems to reach women effectively, Indian cities can ensure timely evacuation and minimize casualties during disasters.

➤ *Gender-Sensitive Infrastructure:*

Poorly planned infrastructure can exacerbate the vulnerabilities women face during disasters. A gender-responsive approach emphasizes creating safe and secure urban spaces:

- **Improved Street Lighting:** Invest in improved street lighting across the city, particularly in informal settlements and high-traffic areas. This enhances women's safety during nighttime evacuations and discourages violence.
- **Safer Sanitation Facilities:** Design and build gender-segregated sanitation facilities in public spaces and relief camps, ensuring adequate lighting, privacy partitions, and proper waste disposal mechanisms. This promotes hygiene, safety, and dignity for women.
- **Public Space Design:** Design public spaces with women's

needs in mind. This includes creating well-lit walking paths, designated spaces for street vendors (often women-led enterprises), and accessible public transportation options to enhance women's mobility.

Investing in gender-sensitive infrastructure creates a more secure and inclusive urban environment for all residents before, during, and after disasters.

➤ *Livelihood Support Programs:*

Disasters can significantly disrupt women's livelihoods, particularly those engaged in informal work sectors. A gender-responsive framework requires incorporating economic recovery strategies into disaster response:

- **Microfinance Initiatives:** Develop microfinance programs specifically designed for women entrepreneurs impacted by disasters. This can provide them with the capital to restart small businesses and rebuild their livelihoods.
- **Skills Training:** Offer skills training programs that equip women with new skills or enhance existing ones, allowing them to adapt to post-disaster job markets and secure alternative sources of income.
- **Market Access Support:** Facilitate access to markets and resources for women entrepreneurs, helping them re-establish their businesses and contribute to the overall economic recovery of the community.

By implementing specific livelihood support programs, Indian cities can empower women to rebuild their lives and become active participants in the economic recovery process after disasters.

These are some of the key elements of a gender-responsive disaster resilience framework for Indian cities. By integrating these strategies into disaster management practices, Indian cities can create a more equitable and sustainable future where all residents, regardless of gender, are empowered to face the challenges of disasters.

## VI. CASE STUDY: A GENDERED APPROACH TO DISASTER PREPAREDNESS IN BHUBANESWAR, INDIA

➤ *Positive Example: Empowering Women in Disaster Resilience*

The city of Bhubaneswar, Odisha, provides a compelling example of how a gender-responsive approach can improve disaster preparedness and resilience. This coastal city is frequently exposed to cyclones and floods, highlighting the need for robust disaster management strategies.

➤ *Shifting the Paradigm:*

Following the devastating 1999 Odisha cyclone caused major damages to buildings and city infrastructure, and loss of human fatalities nearly 10,000 with women constituting a staggering 70% of fatalities, Bhubaneswar embarked on a

significant transformation. Recognizing the disproportionate impact on women, the city administration adopted a gender-inclusive approach to disaster management.

➤ *Key Initiatives:*

- **Women's Disaster Management Committees:** Bhubaneswar established Mahila Sangha (women's associations) in every ward. These committees, with over 3,500 active members, are involved in DRR planning, vulnerability assessments, and community awareness campaigns. Women actively participate in risk identification, suggesting evacuation routes with consideration for women's safety (avoiding poorly lit areas), identifying safe havens with adequate sanitation facilities, and highlighting specific needs like childcare services in shelters.
- **Targeted Early Warning Systems:** The city government disseminates early warnings through multiple channels, reaching a wider audience than traditional methods. This includes local language broadcasts on community radio stations reaching an estimated 2 million listeners, SMS alerts in local dialects sent to over 1.5 million mobile phones, and door-to-door campaigns in high-risk areas, particularly slums and informal settlements. Additionally, trained women volunteers act as local messengers, ensuring effective communication within communities, especially reaching women with limited literacy or reliance on spoken languages.
- **Gender-Sensitive Shelters:** Bhubaneswar prioritizes establishing shelters in safe locations with adequate lighting, proper ventilation, and separate sanitation facilities for women and girls, ensuring privacy and dignity. These shelters also ensure dedicated spaces for breastfeeding mothers and childcare services, addressing a crucial need often overlooked in traditional approaches.
- **Livelihood Support Programs:** Recognizing the economic impact of disasters on women, Bhubaneswar offers microfinance initiatives specifically designed for women entrepreneurs impacted by disasters. Additionally, skill development programs equip women with new skills to adapt to post-disaster job markets and rebuild their livelihoods.

➤ *Impact and Lessons Learned:*

Bhubaneswar's gender-responsive approach has yielded positive results. Studies following Cyclone Phailin in 2013 revealed a significant decrease in female casualties compared to previous disasters. The percentage of women who died dropped from 70% in 1999 to just 10% in 2013. This success story underscores the importance of integrating women's voices and knowledge into all phases of disaster management.

➤ *Challenges and Future Directions*

Despite the progress, certain challenges remain. Reaching women in geographically isolated areas and ensuring their active participation in decision-making

processes require ongoing efforts. Additionally, securing long-term funding for livelihood support programs is crucial for sustained economic empowerment of women.

Bhubaneswar's experience serves as a model for other Indian cities. By adopting a gender-responsive framework, cities can empower women to become active agents in building disaster resilience, leading to a more equitable and sustainable future for all residents. This approach not only saves lives but also fosters a more inclusive and empowered society.

## VII. CONCLUSION AND RECOMMENDATIONS

The devastating impact of disasters on Indian cities disproportionately affects women. Socioeconomic limitations, societal norms, and inadequate infrastructure create a web of vulnerability that traditional, shelter-centric disaster management struggles to address. This research advocates for a paradigm shift towards a gender-responsive framework for building resilient urban communities.

This framework hinges on inclusive planning. Women from diverse backgrounds must be actively involved in disaster risk reduction (DRR) processes. Local Mahila Mandals (women's societies) and Self-Help Groups can serve as platforms for gathering women's insights and experiences. This knowledge, coupled with traditional coping mechanisms, can inform more effective DRR strategies.

Targeted early warning systems are crucial. Disseminating alerts through local languages on community radio broadcasts and mobile networks can ensure information reaches women with limited literacy. Additionally, training women as community leaders to disseminate information and mobilize their communities can bridge the communication gap.

Investing in gender-sensitive infrastructure is equally important. Well-lit streets in slums and high-traffic areas, coupled with safer sanitation facilities in public spaces and relief camps, will enhance women's safety and well-being. Public spaces designed with women in mind, with designated areas for street vendors (often women-led) and accessible public transport options, will further improve mobility.

Disasters disrupt livelihoods, particularly for women engaged in informal work. Livelihood support programs can empower them to rebuild. Microfinance initiatives specifically designed for women entrepreneurs impacted by disasters can provide the capital needed to restart businesses. Skills training programs can equip women with new tools to adapt to post-disaster job markets. Additionally, facilitating market access for women entrepreneurs will help them re-establish businesses and contribute to overall economic recovery.

➤ *Recommendations*

- **City Planners:** Integrate gender considerations into urban planning. This includes creating safe public spaces with good lighting, promoting women-led businesses, and prioritizing accessible public transportation options.
- **Disaster Management Agencies:** Develop gender-responsive DRR plans with active female participation from communities. Focus on vulnerability assessments that consider gender disparities, create targeted early warning systems, and incorporate gender sensitivity training into disaster preparedness efforts.
- **NGOs:** Bridge the gap between women and disaster management agencies. Raise awareness about gender-based vulnerabilities, provide skills training and livelihood programs specifically designed for women, and advocate for policies that promote gender equality in disaster preparedness and recovery efforts.

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