

Centre for Gender and Development Studies (CGDS),

University of Dhaka

Small Research Grants 2026

Research Proposal

**Impact of Heatwave on Women in Urban Marginals: Gendered
Vulnerability, Coping Strategies and Adaptation Needs in Dhaka's
Informal Settlement**

1. Introduction

Heatwaves are becoming an urgent public health, livelihood and gender-equity challenge in rapidly urbanizing cities. In Bangladesh, extreme heat is no longer only a seasonal discomfort; it increasingly affects health, income, mobility, care work and access to services, especially among low-income urban populations. Women living in informal settlements are among the most exposed groups because they often live in overcrowded housing, work in informal and heat-exposed occupations, depend on limited water and sanitation facilities, and carry a disproportionate burden of unpaid domestic and care responsibilities.

Dhaka's informal settlements are critical sites for understanding gendered heat vulnerability. Many residents live in dense housing with limited ventilation, poor access to cooling, unstable livelihoods and weak institutional support. During heatwaves, these vulnerabilities intensify: poor ventilation increases indoor heat, water scarcity affects hygiene and menstrual health, informal workers lose income, and unpaid care work rises when children, older persons or sick family members need support.

Although heat action plans and climate adaptation discussions are growing globally, women's everyday experiences in urban informal settlements remain underexplored. Existing responses often treat climate change, urban poverty, health, livelihoods and gender as separate policy areas. This creates an evidence gap on how heatwaves affect women's bodies, work, safety, care roles and adaptation choices together. This study will address that gap by generating policy-oriented evidence on women's heatwave vulnerability, coping strategies and adaptation needs in Dhaka's marginalized urban communities. The study directly aligns with CGDS priority areas on gender and health ecosystems, climate change-migration-livelihood nexus and gender, intersectional vulnerability of women and girls, and gender-responsive policy action.

2. Brief Literature Review and Conceptual framework

2.1 Literature Review

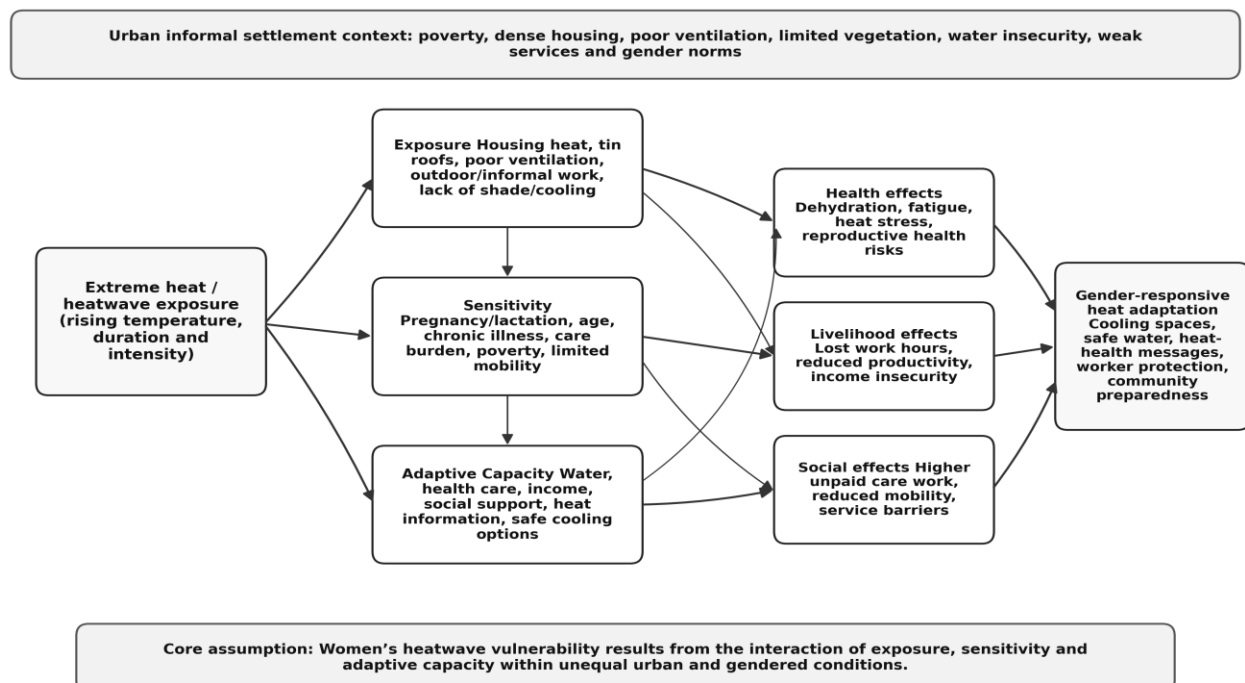
Climate change is increasing the frequency, duration and intensity of extreme heat events, while cities are particularly vulnerable because dense built environments, limited vegetation, poor ventilation and inadequate housing can intensify heat exposure. The IPCC highlights that residents of informal and unplanned settlements face heightened climate risks due to inadequate infrastructure, poverty and weak service access. WHO also emphasizes that heat exposure can increase the risk of dehydration, heat exhaustion, cardiovascular stress, adverse pregnancy outcomes and mortality, especially among vulnerable groups with limited cooling access and constrained health care.

Heat affects women differently due to biological, social and economic factors. Pregnant and lactating women may face increased risks related to dehydration, fatigue and reproductive health stress. Women's unpaid care responsibilities may expand during heatwaves as children, older adults and ill household members require more support. For women engaged in informal work, extreme heat can reduce working hours, productivity and income, while the absence of formal labor protection increases exposure. The ILO has also identified heat stress as a major threat to labor productivity and decent work, particularly in climate-exposed economies and informal employment contexts.

In Dhaka's informal settlements, heat vulnerability is shaped by intersectional conditions, including poverty, gender norms, housing insecurity, occupation, age, disability, pregnancy, chronic illness, water insecurity and household power relations. Women may adopt coping strategies such as changing work hours, borrowing money, reducing food intake, using unsafe water or tolerating heat-related illness without seeking care. However, many of these strategies may be ineffective or harmful. Therefore, localized and gender-responsive evidence is needed to inform urban heat preparedness, women-friendly cooling spaces, improved water access, heat-health communication and protection-sensitive climate planning.

2.2 Conceptual Framework

Conceptual Framework: Gendered Heatwave Vulnerability among Women in Urban Informal Settlements



3. Objectives

Overall Objective: To examine the gendered impacts of heatwaves on women living in marginalized urban communities in Dhaka and identify practical adaptation needs for policy and community interventions.

Specific Objectives:

1. To assess women's perceived exposure to heatwaves and related physical, mental, reproductive and livelihood impacts.
2. To examine how household roles, informal work, housing conditions, water access and care responsibilities shape women's heat vulnerability.
3. To explore women's coping strategies, barriers to adaptation and access to health and social support during extreme heat.
4. To develop gender-responsive recommendations for local government, NGOs, health actors and community-based climate adaptation programmes.

4. Research Questions

1. How do heatwaves affect the health, livelihood, mobility, safety and daily lives of women in urban informal settlements?
2. Which social, economic, environmental and gender-related factors increase women's vulnerability to heat stress?
3. What coping strategies do women use during extreme heat, and how effective or harmful are these strategies?
4. What services, information, infrastructure and policy support are needed to reduce gendered heatwave vulnerability?

5. Research Methodology

Study Design: A cross-sectional mixed-methods design will be used. The quantitative component will measure patterns of heat exposure, health effects, livelihood disruption, service access and coping practices. The qualitative component will explore lived experiences, gendered meanings, barriers and adaptation priorities. This design is suitable for a three-month small grant because it balances empirical evidence with practical policy relevance.

Study Site: The study will be conducted in two informal settlements in Dhaka with high heat exposure, dense housing, limited ventilation, poor access to cooling and visible concentrations of low-income

women. Final sites will be selected in consultation with local NGOs, community leaders and ward-level stakeholders.

Study Population and Sample: The study population will include women aged 18 years and above living in selected informal settlements. Priority will be given to diverse vulnerability profiles, including informal workers, female-headed households, pregnant or lactating women, women with chronic illness, older women and women with high unpaid care responsibilities. The proposed sample will include 120 survey respondents, 12 in-depth interviews with women from different vulnerability profiles, and 6-8 key informant interviews with NGO workers, community leaders, health workers, local volunteers and ward-level actors.

Sampling Strategy: A purposive and quota-based sampling approach will be used to ensure representation of different age groups, occupations, household types and vulnerability categories. For the survey, households will be approached systematically with support from community gatekeepers while maintaining voluntary participation, privacy and inclusion.

Data Collection Tools: A structured survey questionnaire will collect data on socio-demographic characteristics, housing conditions, heat exposure, heat-related symptoms, livelihood loss, unpaid care work, water and sanitation access, coping mechanisms, health-seeking behaviour and perceived support needs. Semi-structured IDI and KII guidelines will explore women's lived experiences of heatwaves, household power relations, care burden, safety concerns, menstrual and reproductive health challenges, adaptation practices, barriers to services and community-level recommendations.

Data Analysis Plan: Quantitative data will be analysed using descriptive statistics, cross-tabulation and simple association analysis. A heat vulnerability profile will be developed using indicators such as housing quality, income insecurity, water access, work exposure, care burden, chronic illness and access to cooling. Qualitative interviews will be transcribed, translated where needed and analysed thematically. Initial codes will include heat exposure, physical symptoms, mental stress, livelihood disruption, unpaid care, household coping, service barriers, safety concerns and adaptation needs. Quantitative and qualitative findings will be triangulated to produce practical and policy-oriented conclusions.

6. Ethical Considerations

The study will follow a gender-sensitive and participant-centred ethical approach. Informed consent will be obtained from all participants. Participation will be voluntary, and respondents may withdraw at any stage without penalty. No participant will be pressured to disclose personal or traumatic experiences. Interviews will be conducted in safe and private spaces by trained researchers. Confidentiality, anonymity and secure data storage will be maintained. Personal identifiers will be removed from transcripts and

reports. If any participant reports urgent health, safety or protection concerns, the research team will provide referral information to available local services.

7. Expected Outcomes and Policy Implications

The study will generate evidence on how extreme heat affects women's health, livelihoods, care responsibilities, mobility and adaptation choices in urban marginalized communities. Expected outputs include:

1. A policy-oriented research report on gendered heatwave vulnerability in Dhaka's informal settlements.
2. A two-page policy brief for local government, NGOs and climate-health stakeholders.
3. A community validation workshop to share findings and refine recommendations.
4. One academic manuscript or conference paper draft.

The findings will inform gender-responsive urban heat adaptation, including heat-health information, women-friendly cooling spaces, improved water access, community awareness, occupational protection for informal workers and gender-sensitive urban planning. The study will also support ward-level climate preparedness and NGO programming for women in informal settlements.

8. Work Plan: Three Months

Activity	Month 1	Month 2	Month 3
Literature review and tool development	✓		
Site selection and stakeholder consultation	✓		
Enumerator orientation and pre-testing	✓		
Quantitative data collection		✓	
IDIs and KIIs		✓	
Data cleaning and analysis		✓	✓
Draft report preparation			✓
Community validation workshop			✓
Final report and policy a brief submission			✓

9. Budget Summary

Budget Head	Amount (BDT)
Research assistants/enumerators	25,000
Field travel and local transport	15,000
Data collection, printing and communication	10,000
Transcription and translation	12,000
Data entry, cleaning and analysis support	10,000
Community validation workshop	18,000
Report design, printing and dissemination	7,000
Contingency	3,000
Total	100,000

10. Researcher's Capacity

The researcher has academic and applied research experience in climate change, health systems, gender, migration, vulnerability and urban marginality. The project team is familiar with mixed-methods research, survey design, qualitative interviews, thematic analysis, policy brief writing and community-level data collection. The researcher's background in development studies and policy-oriented research will help ensure that the study produces academically rigorous and practically useful outputs within the three-month timeline. The team is also capable of engaging community stakeholders, maintaining ethical research standards and translating findings into actionable policy recommendations.

11. Conclusion

Heatwaves are becoming a major threat to urban health and gender equality in Bangladesh. Women in informal settlements experience heat not only through rising temperatures, but also through unsafe housing, unpaid care work, livelihood insecurity, poor access to water and limited institutional support. This study will provide timely, rigorous and policy-relevant evidence on women's heatwave vulnerability and adaptation needs in Dhaka's marginalized urban communities. By centring women's voices, the project will support more inclusive, gender-responsive and climate-resilient urban development.

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