



## TERMS OF REFERENCE

### Research Study

# Effect of Extreme Heat on Maternal and Child Health and Nutrition Outcomes, and Coping Mechanisms among Low-Income Urban Communities in Dhaka, Bangladesh

## 1. Background and Organizational Context

Concern Worldwide is an international humanitarian and development organization, operational in Bangladesh for over five decades. The Country Strategic Plan 2022–2026 is built on five pillars: sustainable impact through health, nutrition, and livelihoods programming; climate resilience; humanitarian action; partnership; and equality, diversity, and inclusion. Concern's development work covers rural communities in the southern coastal belt, char areas in the north, haor regions in the northeast, and urban populations in Dhaka. The organization also responds to the Rohingya refugee crisis in Cox's Bazar through life-saving nutrition and food security interventions.

In line with its climate resilience and health and nutrition priorities, Concern Worldwide is commissioning a research study to generate evidence on the effects of extreme heat on maternal and child health and nutrition outcomes in low-income urban communities in Dhaka.

**The Urban Green Graduation Programme (UGGP).** This five-year programme, running from 2023 to 2027, is implemented in Dhaka North and South City Corporations in partnership with SEEP, Nari Maitree, and the Coalition for the Urban Poor, with financial support from Irish Aid. The programme targets marginalized households and aims to advance sustainable livelihoods through green jobs and enterprises. UGGP participants live in precarious conditions and face compounded climate vulnerabilities, including limited access to WASH, healthcare, education, and social protection services. Within these communities, female-headed households, persons with disabilities, the elderly, adolescent girls, and young children face additional layers of exclusion. Recurrent shocks, including fires, waterlogging, and forced evictions, further compromise household stability. This research study is intended to generate evidence directly relevant to the approximately 12,500 UGGP participants and to inform programme and policy responses to heat-related risk.

## 2. Rationale and Problem Statement

Bangladesh is experiencing increasing frequency, intensity, and duration of extreme heat events, driven by climate change. Urban informal settlements in Dhaka are among the most exposed settings due to poor housing construction, minimal ventilation, high population density, urban heat island effects, and limited access to healthcare and adaptive resources. Pregnant and lactating women, newborns, and children under five face heightened risks, including heat-related illness, disrupted breastfeeding and complementary feeding practices, and reduced use of maternal and child health services.

Despite growing recognition of these risks, empirical evidence on how extreme heat affects maternal and child health and nutrition in low-income urban settings remains limited, particularly with respect to newborns and children under five. Evidence on household and community coping mechanisms, and on the capacity of health systems to respond to heat stress, is equally limited. This research addresses that gap and is intended to inform context-specific, equitable, and evidence-based heat adaptation and resilience strategies at programme, institutional, and policy levels.

## 3. Purpose of Research

The purpose of this research is to design and implement a mixed-methods study that examines the impact of extreme heat on maternal and child health and nutrition outcomes in urban informal settlements of Dhaka. The study will also explore household and community coping mechanisms, assess health system readiness, and identify institutional and policy gaps that limit heat resilience among low-income urban populations.

## 4. Research Objectives

The study will address the following objectives:

Objective	Description
1	To assess the population-level impact of heat stress on pregnant and lactating women, newborns, and children under five living in urban informal settlements in Dhaka, with attention to those most exposed to heat-related hazards.
2	To examine household and community coping mechanisms in response to extreme heat, including behavioral adaptations, use of social networks, and access to adaptive resources.
3	To assess health system readiness and response capacity, covering heat early warning systems, communication of key messages, and accessibility of primary healthcare services for poor and extremely poor urban populations.
4	To identify institutional and policy gaps that constrain heat resilience and to formulate actionable recommendations for government, donors, implementing organizations, and communities.

## 5. Scope of Work

The consultant(s) or consulting firm will be responsible for the following tasks, organized by phase.

### 5.1 Phase 1 – Study Design and Inception

- Conduct a desk review of relevant literature, policies, and existing evidence on extreme heat, maternal and child health, and nutrition in urban informal settlement contexts.
- Refine the research framework, objectives, questions, methodology, and sampling strategy in consultation with Concern Worldwide.
- Develop data collection tools for both quantitative and qualitative components.
- Submit an inception report containing the finalized methodology, work plan, ethical approval process, and data management protocols. The report requires written clearance from Concern Worldwide before field work begins.

### 5.2 Phase 2 – Data Collection

The study will adopt mixed-methods cross-sectional design, combining quantitative and qualitative approaches.

#### 5.2.1 Quantitative Component

- Design and administer a organized household survey in selected informal settlements within Dhaka North and South City Corporations.
- The survey will measure the prevalence and intensity of heat stress exposure, health and nutrition outcomes among target groups, and use of adaptive resources and services.
- Apply a probability-based sampling approach with adequate sample size to enable disaggregation by sex, age group, disability status, and geographic location.

#### 5.2.2 Qualitative Component

- Conduct focus group discussions (FGDs) with community members, including women, caregivers, and adolescent girls, representation from pavement dwellers and Dalit groups.
- Conduct key informant interviews (KIIs) with healthcare providers, community health workers, local government representatives, and programme staff.

- Explore lived experiences of heat stress, household coping strategies, and perceptions of service accessibility and quality.

### 5.2.3 Sample Size and Sampling Strategy

Sample size for the quantitative component has been calculated using the Cochran formula for proportion estimation, applied with a finite population correction (FPC) for the UGGP participant base of 12,500 in Dhaka.

Parameter	Value	Rationale
Confidence level	95%	Standard for population-level health research
Z-score	1.96	Corresponds to 95% confidence interval
Expected proportion (p)	0.50	Conservative estimate; maximizes required sample size
Margin of error (e)	±5%	Acceptable precision for programmatic evidence
Base sample size (n <sub>0</sub> )	384	$n_0 = Z^2 \times p(1-p) / e^2$
Reference population (N)	12,500	Total UGGP participants, Dhaka North and South
FPC-adjusted sample (n)	373	$n = n_0 / (1 + (n_0-1)/N)$
Non-response adjustment (+10%)	410	Accounts for refusals, absences, and incomplete records
<b>Final recommended sample size</b>	<b>410 HH</b>	<b>Minimum to be maintained throughout field work</b>

The 410 households will be distributed proportionally between Dhaka North and Dhaka South City Corporations based on the share of UGGP participants in each area. Within each city corporation, wards or settlements will be selected using probability proportional to size (PPS) sampling. Households within selected settlements will be identified through systematically random sampling from programme registration lists.

The sample will be disaggregated to support sub-group analysis by sex of household head; presence of pregnant or lactating women; children under five, with specific attention to newborns under 28 days; households with persons with disabilities; and geographic location (north/south city corporation). Where a sub-group falls below 30 cases in the initial draw, purposive oversampling will be applied and documented in the inception report.

**Qualitative sample.** The qualitative component will include a minimum of eight and a maximum of ten FGDs, each with six to eight participants, drawn from distinct community groups: women of reproductive age, male household heads, adolescent girls, and community health workers. Between 20 and 25 KIIs will be conducted with healthcare providers, facility managers, local government officials, and relevant government department representatives. Sampling will be purposive, with participants selected to maximize variation in experience, location, and institutional role. Saturation will inform the final number of sessions, and any deviation from the planned numbers must be documented and justified in the final report.

### 5.2.4 Ethical Standards

- All data collection must comply with the Bangladesh Medical Research Council (BMRC) ethical review requirements and Concern's safeguarding and data protection policies.
- Informed consent must be obtained from all study participants. Interviews with minors require guardian consent and child assent.
- All research instruments and procedures must demonstrate compliance with Do No Harm principles, with particular attention to the vulnerability of the target population.

### 5.3 Phase 3 – Analysis and Reporting

- Analyze quantitative data using SPSS or Stata. Analyze qualitative data using NVivo or an equivalent platform.
- Triangulate findings from both components to produce a coherent and evidence-grounded analysis.
- Prepare a draft research report setting out the methodology, findings, analysis, conclusions, and recommendations. The draft is to be submitted to Concern Worldwide for review.
- Incorporate feedback and finalize the research report within the agreed timeframe.

### 5.4 Phase 4 – Validation and Dissemination

- Facilitate a validation workshop with key stakeholders, including Concern Worldwide staff, programme partners, government representatives, and community members where appropriate.
- Finalize all deliverables in response to validation feedback.
- Support dissemination of findings through a dissemination workshop and through the preparation of a policy brief suitable for government, donor, and academic audiences.

## 6. Expected Deliverables

#	Deliverable	Submission Milestone
1	Inception report: finalized methodology, work plan, sampling strategy, and data collection tools	End of Phase 1
2	Data collection tools: quantitative survey and qualitative guides (FGD, KII)	With inception report
3	Cleaned datasets and analysis summary: quantitative and qualitative data files with codebook	End of Phase 3
4	Draft research report: methodology, findings, analysis, conclusions, and recommendations	End of Phase 3
5	Final research report: incorporating all stakeholder feedback from validation workshop	End of Phase 4
6	Policy brief: evidence summary and recommendations for government, donors, academia, and implementing organizations	With final report
7	Presentation materials: PowerPoint decks for validation and dissemination workshops	End of Phase 4

All reports must be submitted in English. The final research report should not exceed 60 pages, excluding annexes. The policy brief should not exceed four pages.

## 7. Duration and Indicative Timeline

The assignment is to be completed by 30<sup>th</sup> September, 2026. The following indicative timeline applies from the date of contract signing. A detailed work plan will be finalized and agreed during the inception phase.

Phase	Activities	Indicative Duration
Phase 1 – Inception	Desk review, tool development, inception report	2–3 weeks
Phase 2 – Data Collection	Field surveys, FGDs, and KIIs	4–5 weeks

<b>Phase 3 – Analysis and Reporting</b>	Data analysis, draft report preparation	3–4 weeks
<b>Phase 4 – Validation and Dissemination</b>	Validation workshop, finalization, dissemination	2 weeks
<b>Total</b>		Approximately 12–14 weeks

**8. Management and Reporting Arrangements**

The consultant(s) will report to the Programme Director of Concern Bangladesh, or a designated representative. Day-to-day coordination will be managed by the MEAL team. Regular coordination meetings will be held at agreed intervals to review progress, address emerging issues, and confirm any adjustments to the work plan.

Concern will provide access to relevant programme documents, data, and staff contacts to support the research. The consultant(s) are responsible for securing ethical approval, enumerators training and for managing field logistics within the agreed budget.

Any publication derived from this study, using data or reference, requires prior permission from Concern Worldwide.

All shared data must be fully anonymized to protect identity and confidentiality of participants and follow General Data Protection Regulations (GDPR).

**9. Budget**

Interested consultants and firms must submit a detailed financial proposal with cost breakdowns by phase and activity. All costs must be inclusive of Value Added Tax (VAT) and applicable taxes as required under government regulations.

Concern will evaluate financial proposals based on value for money in relation to technical proposal. A lowest-cost-only selection approach will not be applied.

**10. Payment**

The consultant will be paid an agreed amount including VAT and tax for the total assigned service. Full payment will be made upon completion of the assignment as per the agreed ToR. The payment mode will be in **three (3) instalments** for the entire assignment against invoices issued by the Consultant:

- a) First instalment is 20% after the inception report is formally signed off by the Programme Director.
- b) Second instalment of 30% of the payment will be made after submission of the draft report.
- c) The remaining 50% will be paid upon satisfactory submission and acceptance of the final report along with all accompanying documents as specified in the agreement.

Concern will not be liable for any bank charges arising from incorrect bank details being provided to Concern.

**11. Accommodation & Food Allowance:** No accommodation nor per diem will be paid in addition to agreed consultancy fees.

**12. Penalty**

If the consultant does not complete the assignment within the specified period, Concern Worldwide will deduct 1% of the total payment for each day of delay. If Concern Worldwide approves any request for an extension of time, this clause will not apply. However, if Concern Worldwide does not approve the time extension request, the consultant will be subject to a 1% deduction of the total payment for each day of delay.

### 13. Ethical Standards and Safeguarding

All consultants and team members involved in this assignment must adhere to Concern Worldwide's Code of Conduct and associated safeguarding policies, including the Programme Participant Protection Policy, Child Safeguarding Policy, and Anti-Trafficking in Persons Policy. Research activities must meet the highest ethical standards throughout all phases of study.

The research team is responsible for obtaining ethical approval from the Bangladesh Medical Research Council (BMRC) or an accredited Institutional Review Board (IRB) prior to commencing field data collection. Evidence of ethical approval must be submitted to Concern Worldwide as part of the inception report. Any safeguarding concern identified during the research must be reported immediately through Concern Worldwide's designated reporting channels.

### 14. Copyright and Confidentiality

Concern Worldwide will have the copyright for all the documents, reports, and outputs generated as part of this study shall be the intellectual property. The copyright for these study/content will remain with Concern Worldwide and any reproduction or use of the study/content must be approved in writing.

You shall not use or disclose to any person during or at any time after your engagement by Concern any information relating to Concern's business and operations or any other matters which may come to your knowledge whilst providing the Services, and which may reasonably be regarded as confidential (Confidential Information). You further undertake to use all Confidential Information disclosed under this Agreement exclusively for the purposes of providing the Services. Any information which was already in your possession before it was disclosed to you under this Agreement or was already in the public domain; or Any disclosure required by law.

### 15. Concern World wide's policies and guidelines

**Concern's Code of Conduct (CCoC) and its associated safeguarding policies;** the Programme Participant Protection Policy, the Child Safeguarding Policy and the Anti-Trafficking in Persons Policy have been developed to ensure the maximum protection of programme participants from exploitation and to clarify the responsibilities of Concern staff, consultants, contractors, visitors to the programme and partner organisations, and the standards of behaviour expected of them. In this context staff have a responsibility to the organisation to strive for and maintain the highest standards in the day-to-day conduct in their workplace in accordance with Concern's core values and mission. Concern's Code of Conduct and its associated safeguarding policies have been appended to this Contract for your signature. By signing the Concern Code of Conduct you demonstrate that you have understood their content and agree to conduct yourself in accordance with the provisions of these two documents.

**Breach of Code of Conduct and Sharing of Information:** We are required to share details of certain breaches of Concern's Code of Conduct, specifically those related to fraud, sexual exploitation, abuse and harassment and trafficking in persons, with external organizations such as institutional donors, regulatory bodies and future employers. In the event where you have been found to be in breach of these aspects of Concern's Code of Conduct, your personal details (e.g. name, date of birth, address and nationality) and details of these breaches will be shared with these external bodies. Organizations may retain this data and use it to inform future decisions about you.

In addition, where we are working in partnership with another organization and where there are allegations of breaches in the above areas against you, we will cooperate with any investigation being undertaken and will share your personal details with investigation teams.

A breach of this policy will result in disciplinary action up to, and including, dismissal.

## 16. Consultant / Firm Profile and Eligibility

Concern Worldwide invites expressions of interest from qualified individual consultant or consulting firms meeting the following criteria.

### 16.1 Minimum Qualifications (Lead Researcher)

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- Postgraduate degree or PhD in public health, nutrition, epidemiology, climate science, social sciences, or related fields.
- A minimum of **10 years** of demonstrable experience in research on public health, nutrition, and/or climate-related health issues.
- Proven experience in conducting mixed-methods research in urban informal settlement contexts in Bangladesh.
- Solid understanding of the policy and institutional landscape relevant to health, nutrition, and climate adaptation in Bangladesh.
- Strong analytical, writing, and stakeholder facilitation skills.
- Familiarity with ethical research standards, including BMRC requirements/or any other Ethical Board regulations.

### 16.2 Required Submission Documents

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#### For Individual Consultants

- A curriculum vitae of no more than three pages, detailing relevant assignments with client name, contact person, and communication details.
- Short CVs of any additional team members, highlighting relevant tasks.
- TIN certificate.
- A technical proposal of no more than ten pages, covering understanding of the assignment, proposed methodology, and work plan.
- A financial proposal of no more than two pages, submitted as a separate file.

#### For Consulting Firms

- A firm profile of no more than three pages, highlighting relevant assignments with client details as above.
- A curriculum vitae of no more than two pages for the lead consultant (Team Leader), detailing relevant experience.
- Short CVs for all other team members proposed for this assignment.
- Legal documents: certificate of incorporation, TIN, and VAT registration.
- A technical proposal following the format above, submitted as a separate file.
- A financial proposal submitted as a separate file.

Applications should be submitted to: [consultancy.bgd@concern.net](mailto:consultancy.bgd@concern.net) Concern Worldwide reserves the right to select one or more consultants or firms based on technical competence, relevant experience, and value for money.

**17. Online Pre-bid Discussion Meeting**

Interested consultants are requested to join the pre-bid discussion meeting, which will be conducted online via MS Teams:

Date: 08 June 2026 (Monday)

Time: 11:00 AM - 12:00 PM

Meeting link: Join: <https://teams.microsoft.com/meet/349320353013037?p=8Kd2YUsIWFTFbk4fLC>

Meeting ID: 349 320 353 013 037

Passcode: Fc2nd2CC

**18. Application and Selection Process**

Interested individuals and firms must submit the following documents by the application deadline:

1. A technical proposal of no more than ten pages, covering understanding of the assignment, proposed methodology, and work plan.
2. A financial proposal of no more than two pages, with a detailed cost breakdown. All figures must be inclusive of VAT and applicable taxes.
3. CVs of key personnel and examples of relevant past research, including a copy of a research report / publication led by the proposed PI.
4. Contact details of at least three professional referees.
5. A summary document against the selection criteria.

**19. Proposals will be assessed on the following criteria:**

Evaluation Criterion	Indicative Weight
Technical quality: understanding of the assignment and proposed methodology	35%
Relevant experience: prior research on health, nutrition, and climate in Bangladesh	25%
Team qualifications: expertise and composition of the proposed team	20%
Value for money: financial proposal in relation to technical quality	20%

**Annex: Acronyms and Abbreviations**

Acronym	Full Term
BMRC	Bangladesh Medical Research Council
CFM	Complaints and Feedback Mechanism
FGD	Focus Group Discussion
IRB	Institutional Review Board
KII	Key Informant Interview
MEAL	Monitoring, Evaluation, Accountability, and Learning
MCH	Maternal and Child Health

NFI	Non-Food Item
ToR	Terms of Reference
UGGP	Urban Green Graduation Programme
WASH	Water, Sanitation, and Hygiene