



Policy Brief

Extreme Heat A New Disaster Risk to The Right to Food in Bangladesh

Key Messages

Extreme heat has emerged as a slow-onset disaster in Bangladesh with direct, measurable impacts on food production, household income and the right to adequate food not simply a public-health hazard. Heat-related workday and income losses cost Bangladesh an estimated US\$1.78 billion (around 0.4% of GDP) and roughly 250 million lost workdays in 2024 alone, falling hardest on landless labourers, farmers, fishers and informal workers. Households have almost no buffer against heat shocks. Bangladesh's disaster law already recognises heatwaves as a disaster, but has no operational system of thresholds, worker protections, food-security triggers or financing to convert that recognition into protection.

Core Asks

- Government of Bangladesh: adopt a National Heat Action Framework under the Disaster Management Act 2012, with the right to food and nutrition as its organising principle.
- International donors & UN agencies: fund and provide technical support for heat-triggered anticipatory action and social-protection systems in climate-vulnerable countries, including Bangladesh.
- International right-to-food community: recognise extreme heat explicitly as a right-to-food issue within ICESCR monitoring, the CFS, and global climate and food-security advocacy.

01 | Extreme Heat is a Right to Food Issue

Bangladesh is a global “role model” for managing rapid-onset disasters such as cyclones and floods, but it remains comparatively ill-equipped to handle the escalating slow-onset disaster of extreme heat. The country ranks second worldwide for exposure to elevated temperatures, and in Dhaka the heat index has risen roughly 65% faster than the national average. Bangladesh recorded about 46 days above 35°C apparent temperature in 2000; April 2024 brought the country’s longest recorded heatwave, with 120 heatwave days, the highest number of April heatwave days since 1948, and the heat index reached 40°C in May 2025. Only Cambodia saw a steeper rise in such days over the same period. Night-time temperatures are also warming faster than daytime highs in Bangladesh’s cities, eroding the overnight recovery that limits cumulative heat stress on health, labour capacity and food preparation. ^[1]

United Nations Environment Programme’s most recent assessment warns that the further global temperatures rise above 1.5°C, and the longer they stay elevated, the greater the risk to agriculture and food security with global food production potentially falling by up to 14% by 2050 without effective adaptation, intensifying pressure on climate-vulnerable countries such as Bangladesh. ^[2]

This is fundamentally a right-to-food challenge. The state’s obligation to ensure food security is being undermined as rising temperatures disrupt both the physical availability of food and the economic access of the most vulnerable. Food security is not a static caloric metric; it is a rights-based entitlement, and it is increasingly under threat from a strategic policy void. Extreme heat affects farmers, fishers, agricultural labourers, rickshaw pullers, construction and market workers, and



Bangladesh may face 23–41 extra hot days annually by 2050, depending on global emissions, with a middle scenario adding about 32 days.

What Counts as a Heatwave?

In Bangladesh, a heatwave is officially defined as a period in which the daily temperature exceeds 36°C across a wide area for at least three consecutive days. Related terms heat dome, temperature anomaly, thermal extreme, warm spell describe variations on the same hazard. This brief treats both single dangerous heat days and multi-day heatwaves as disaster risks requiring a coordinated policy response.

anyone working outdoors or in poorly ventilated conditions reducing safe working time, increasing water demand, stressing livestock and fisheries, accelerating food spoilage, and raising the cost of an adequate diet. Effective risk reduction therefore requires coordinated action across disaster management, health, meteorology, agriculture, food, labour, water, energy, planning, social protection and local government.

Compounding factors are converging. Strengthening **El Niño** conditions raise the risk of heatwaves, with a higher-than-normal likelihood of below-normal rainfall over the

Indian subcontinent in the August–October period. At the same time, global food prices rose in August to their highest level since late 2022, driven partly by adverse weather and disrupted grain trade. Bangladesh has already experienced damaging floods in the haor wetlands and in Chattogram this year 2026; lower rainfall combined with high temperatures could still affect Aman rice, winter crops and the following Boro season, compounding pressure on production, prices and access to an adequate diet.

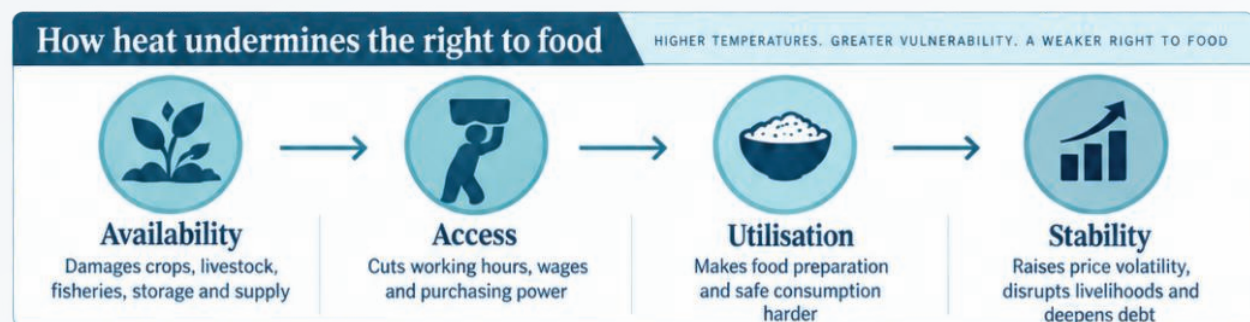
El Niño

El Niño is the warm phase of the El Niño–Southern Oscillation (ENSO), one of the most powerful naturally occurring climate patterns on Earth. It is marked by a warming of ocean surface temperatures in the central and eastern equatorial Pacific, typically recurring every two to seven years and persisting for nine to twelve months, with effects on rainfall and temperature patterns worldwide. ^[4]

02 | How Extreme Heat Undermines the Right to Food and Nutrition

The right to adequate food requires that food be available in sufficient quantity, economically and physically accessible, safe, nutritionally adequate, and stable over time. Extreme heat can undermine each of these

conditions simultaneously, and a rights-based heat response must protect not only food production but people's ability to obtain, safely prepare, and consistently consume adequate food during dangerous heat.



Pillar	What It Requires	
Availability	Sufficient food from production, storage, transport and markets.	Damages crops, livestock and fisheries; shortens the safe storage life of perishable food where cold storage and reliable electricity are unavailable.
Access	Physical and economic ability to obtain food.	Cuts working hours, wages and productivity for outdoor and informal workers, reducing purchasing power within days.
Utilisation	Ability to safely prepare and consume food that meets nutritional needs.	Dehydration and heat illness make food preparation harder; unpaid care and cooking burdens rise in hot, poorly ventilated homes.
Stability	Consistent access to adequate food over time, without shocks.	Recurrent heat shocks disrupt production and labour calendars, raise price volatility, and deepen debt.

Availability and Access

Heat disrupts food production, storage, transport and market supply. It increases evapotranspiration and irrigation demand, reduces the physical capacity of farmers and labourers, stresses livestock and poultry, and threatens fish survival in warmer, oxygen-depleted water. Bangladesh's 2021 heat shock damaged an estimated 21,000 hectares of rice – a clear illustration of how heat, low rainfall and low humidity can rapidly cause production loss.^[5] The FAO and WMO describe extreme heat as a compounding risk multiplier: it amplifies existing weaknesses across crops, livestock, fisheries, water systems, labour markets and household incomes, and can worsen drought, wildfire risk and the spread of pests and disease.

Because income is the main route through which most households obtain food, heat-driven losses in working hours, wages and productivity translate directly into lost purchasing power – a particularly severe problem for landless agricultural labourers,

fishers, construction and transport workers, street vendors and other informal workers who cannot absorb a missed day of income. Affected families may buy less food, shift away from protein-rich and nutrient-dense options, borrow money, or reduce meal size, coping strategies that reduce dietary diversity and raise the risk of malnutrition, particularly for children, pregnant and breastfeeding women, older people and those with chronic illness. Research from Oxford University shows that extreme heat can undermine household food security within days rather than months.^[6]

This risk is already acute among vulnerable urban households in Bangladesh: Participatory Research & Action Network-PRAAN and Bangladesh Food Security Network- KHANI's joint study in Satkhira, found that 90.8% of surveyed slum households in regular normal day had either no food reserves or enough for only one to three days meaning even a brief heat-related disruption to income or work could quickly compromise their ability to access adequate food.^[7]

Utilisation and Stability

Dehydration, heat exhaustion and illness make it harder to prepare, store and safely consume food. Women and girls often carry additional unpaid care and cooking burdens in hot, poorly ventilated homes, and children, pregnant and breastfeeding women, older people, people with disabilities, and people with chronic illness face heightened nutrition and health risks. Recurrent heat shocks disrupt

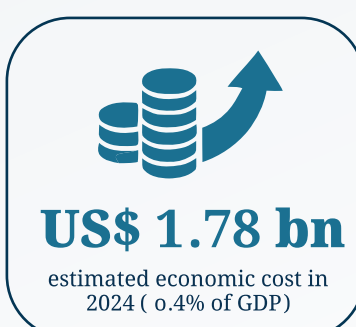
production and labour calendars, increase price volatility, exhaust savings and deepen household debt undermining the stability dimension of food security over time. These effects remain insufficiently recognised, particularly among ethnic communities and other groups facing social and geographic exclusion.

03 | Food Production and Livelihoods Under Heat Stress

Bangladesh's food production system faces growing pressure from extreme heat. Higher temperatures dry soils, raise irrigation demand, and expose crops to damaging heat stress at planting, flowering, grain-filling, harvest and post-harvest stages; rice, vegetables and fruit are especially vulnerable when heat coincides with low rainfall, water scarcity or salinity. Agricultural workers face a substantially higher risk of heat-related mortality than workers in other sectors, and lost an estimated 732 working hours in 2024 - equivalent to about 92 working days.^[8] Under the combined impacts of climate change, including heat, drought and water scarcity, cropland could shrink by 6.5% nationally and by 18% in Southern Bangladesh specifically by 2040, with rice production falling by 8% and

wheat by 32% by 2050. Climate variability and extreme events could also displace up to 13.3 million people internally by 2050, and cost the country a third of its total agricultural GDP internally by 2050, and cost the country a third of its total agricultural GDP.^[9] Inadequate cold storage, unreliable electricity and transport disruption intensify spoilage of already-scarce perishable foods, pushing up prices and further limiting access to nutritious diets.

For agricultural households, this is a double burden: farmers may lose production from their own land while landless labourers lose workdays and wages at the same time - leaving households with both less food from their own production and less cash to buy food from the market.



Extreme heat's measured toll on Bangladesh's workforce and food security, 2024–2026.

04 | A Gendered Right to Food Under Heat Stress

Extreme heat does not affect all Bangladeshis equally, and gender is one of the clearest lines along which its right-to-food impacts diverge. Women make up a substantial share of Bangladesh's agricultural workforce, particularly in homestead farming, livestock rearing and post-harvest processing, yet global evidence shows that women's work burdens decline far less than men's during periods of heat stress^[10] meaning that as men reduce outdoor labour on dangerously hot days, women's workloads, often unpaid or informal, tend to persist.

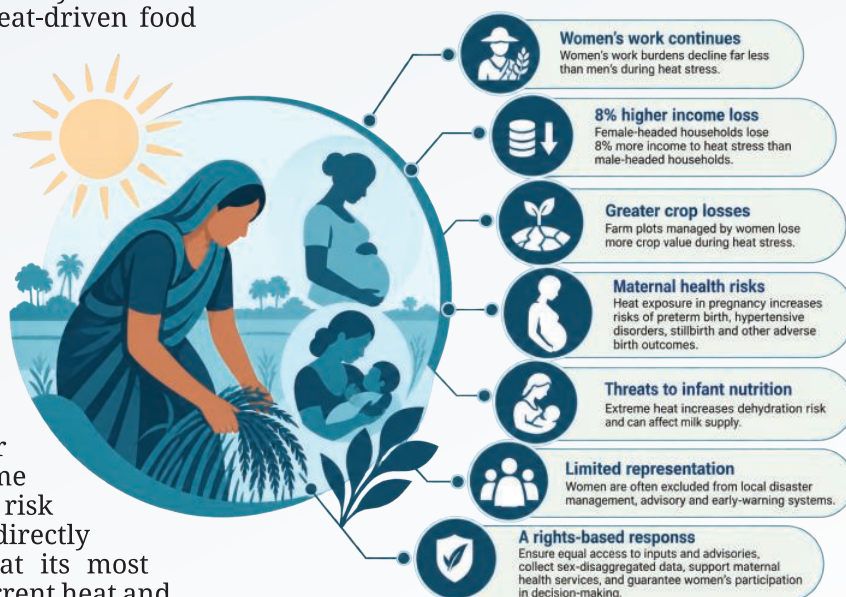
This gap carries a measurable economic cost. A 2024 global analysis of climate impacts on rural households found that female-headed households lose an average of 8% more income to heat stress than male-headed households, and that farm plots managed by women lose significantly more crop value during heat stress than those managed by men a gap linked to women's more limited access to irrigation, credit, extension advice and secure land tenure.^[11] Because income is the primary channel through which most Bangladeshi households access food, this income gap translates directly into a food security gap: female-headed households are likely to absorb a disproportionate share of heat-driven food insecurity.

Heat also carries specific reproductive and maternal health risks with direct nutrition consequences. A 2024 systematic review and meta-analysis of 198 studies across 66 countries found consistent evidence linking heat exposure during pregnancy to higher rates of preterm birth, hypertensive disorders, stillbirth and other adverse birth outcomes.^[10] For breastfeeding women, extreme heat increases dehydration risk and can affect milk supply, directly threatening infant nutrition at its most vulnerable stage an impact current heat and

disaster policy in Bangladesh does not address.

Women are also frequently excluded from the institutions that shape heat governance. Local disaster management committees, agricultural extension services and early-warning dissemination chains are often structured around male household heads and male-dominated public spaces, meaning women, who typically manage household food stocks and daily meal preparation, may receive heat warnings later or filtered through others reducing their ability to adjust food storage, cooking schedules or water use before a heatwave hits.

A rights-based response to extreme heat must treat these gender gaps as central to food security, not a secondary concern layered on afterward from collecting sex-disaggregated data on heat-related food and income loss, to ensuring women farmers have equal access to heat-resilient inputs and advisories, to resourcing maternal health services through heatwave periods, to guaranteeing women a seat in the local committees that decide how a community prepares for and responds to heat.

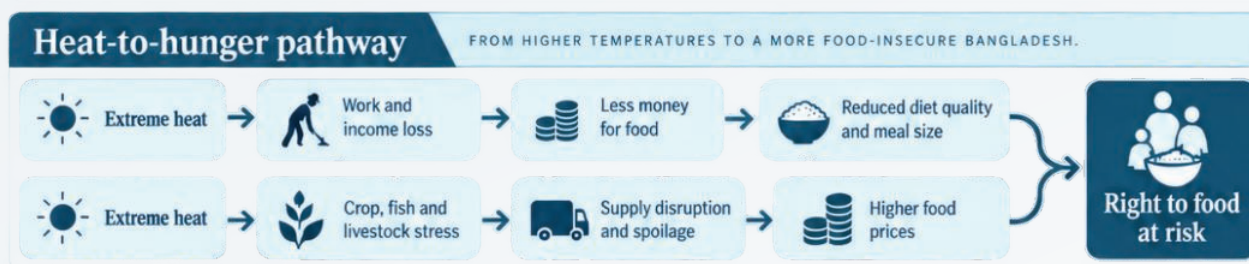


05 | A Policy Gap That Is Operational, Not Legal

Bangladesh does not need to start from zero. The Disaster Management Act 2012 expressly lists heatwave among the events that constitute a disaster, and the Standing Orders on Disaster 2019 assign relevant roles to the Bangladesh Meteorological Department (BMD) and the Ministries of Food, Agriculture, and Labour and Employment, among others (Annex). What Bangladesh lacks is not recognition but operationalisation: a heat-specific system of thresholds, alerts, early action, safe-work protections, food-security support, local contingency plans, financing and accountability.

The central policy gap is therefore operational rather than legal. Bangladesh recognises heatwaves as a disaster but has not yet built a coordinated institutional response that protects people from heat-related loss of

income, food, health and dignity. These are, at their core, governance failures: fragmented policies, limited legal and regulatory follow-through, short-term emergency responses, unclear institutional duties, weak data-sharing, disconnected financing, and inadequate protection for the people facing the highest risk. Extreme heat risk cannot be reduced through isolated sectoral action - it requires a governance system that connects policy, institutions, information, finance and accountability at the scale and speed the hazard demands. A National Heat Action Framework should link early warning with action across agriculture, food, labour, health, water, energy, social protection and local government, with the right to food and nutrition as its organising principle.



06 | Grounding the Response in International Right-to-Food Law

Bangladesh's domestic response does not need to be built in isolation - it can draw directly on, and contribute to, an existing body of international right-to-food and disaster-risk commitments.

Article 11 of the International Covenant on Economic, Social and Cultural Rights (ICESCR) recognises the right of everyone to adequate food, and the Committee on Economic, Social and Cultural Rights' General Comment No. 12

clarifies that this requires food to be physically and economically accessible at all times - a standard that extreme heat directly threatens by disrupting both production and income. The FAO/Committee on World Food Security's Voluntary Guidelines on the right to adequate food call on states to build early-warning and social-protection systems that reach vulnerable groups before a crisis deepens - precisely the operational gap this brief identifies in Bangladesh's heat governance.

The mandate of the UN Special Rapporteur on the Right to Food has increasingly examined the intersection of climate change and food systems, offering a natural international channel for Bangladesh's experience with heat-driven food insecurity.

Because Bangladesh already frames heatwaves as a disaster, its response also sits squarely within the Sendai Framework for Disaster Risk Reduction 2015–2030, which calls for multi-hazard early-warning systems and the integration of disaster risk reduction into food security and livelihoods - an approach Bangladesh already applies well to

cyclones and floods, and could extend to heat. Finally, unmanaged heat risk works directly against Sustainable Development Goal 2, both Target 2.1 (ending hunger and ensuring access to safe, nutritious food) and Target 2.4 (building resilient agricultural practices that help adapt to climate change).

Framed this way, a National Heat Action Framework is not only a domestic policy fix - it is a concrete way for Bangladesh to operationalise commitments it already holds internationally, and a ready-made entry point for international partners to support.

07 | Conclusion

Bangladesh already has the legal mandate and institutional structures to address extreme heat - the Disaster Management Act 2012 and the Standing Orders on Disaster 2019 are a genuine starting point. What is missing is the translation of that recognition into a heat-specific, rights-based, operational protection system. Extreme heat is no longer only an environmental or public-health concern; it is a matter of social justice, labour rights, livelihoods, and the right to food and nutrition. A National Heat Action Framework - one that connects localised early warning with heat-triggered action across agriculture, safe

working conditions, food-market protection, social protection and timely income support can prevent losses before they deepen, strengthen the resilience of food systems and livelihoods, and ensure that Bangladesh's commitment to the right to food and nutrition holds even as the climate warms. Bangladesh cannot do this alone, and it should not have to: the international right-to-food and climate community already has both the frameworks and the resources to make this a shared undertaking.



08 | Recommendations

8.1 For the Government of Bangladesh

Agriculture and Food Systems Resilience

- Issue real-time, localised advisories on crop management, water conservation and soil moisture during high-heat periods through the Ministry of Agriculture and DAE.
- Establish early-action protocols to protect fisheries and livestock from heat stress and oxygen-depleted water.
- Invest in decentralised cold-storage and resilient energy infrastructure to reduce post-harvest spoilage of perishable, nutrient-dense foods.
- Establish a dedicated agricultural insurance and recovery fund for heatwave-induced crop losses.

Employment Security and Social Safety Nets

- Establish and enforce mandatory heat-safe work standards, including rescheduling strenuous outdoor work to cooler hours.
- Create reporting mechanisms for heat-related illness and compensation for affected workers.
- Build temperature-triggered social protection that automatically deploys time-bound cash or food assistance when severe heat alerts disrupt daily earnings.
- Ensure these safety nets explicitly reach informal and landless workers - agricultural labourers, fishers, rickshaw pullers, street vendors and construction workers.

Governance, Thresholds and Early Warning

- Establish location-specific heat-index thresholds - accounting for local humidity, historical temperature and community vulnerability, and set to exceed the 90th or 95th percentile of normal regional conditions.
- Adopt a National Heat Action Framework under the Disaster Management Act 2012 and Standing Orders 2019, mapping clear responsibilities across Agriculture, Food, Labour, Health and Disaster Management before, during, and after a thermal disaster.
- Issue clear, colour-coded, localised heat warnings from the Bangladesh Meteorological Department, disseminated directly to rural farmers, transport unions and informal settlements.

Local Planning and Social Inclusion

- Require local disaster management committees (district to ward level) to include heatwave vulnerability in local plans and budgets.
 - Establish accessible cooling spaces, safe drinking water and emergency health-referral pathways in high-density labour centres.
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8.2 For International Donors, UN Agencies and Development Partners

- Fund the design and piloting of heat-triggered anticipatory-action and social-protection systems, building on existing flood- and cyclone-focused early-action financing models.
 - Provide technical assistance to the Bangladesh Meteorological Department for location-specific heat-index threshold-setting and forecasting capacity.
 - Integrate heat-related right-to-food risk into country programming - FAO, WFP, UNICEF and ILO country strategies - and into climate finance instruments, including adaptation funds and the Loss and Damage Fund.
 - Support locally-led research that fills the evidence gap on urban informal-settlement vulnerability, of the kind PRAAN has begun in Satkhira.
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8.3 For the International Right-to-Food and Human Rights Community

- Recognise extreme heat explicitly within right-to-food monitoring and reporting, including ICESCR treaty-body reviews, the Committee on World Food Security, and the Special Rapporteur on the Right to Food.
 - Support regional learning among heat-exposed South Asian countries on rights-based approaches to heat governance.
 - Elevate the evidence linking heat stress to right-to-food harms in global advocacy spaces, including UNFCCC COP negotiations, the CFS, and the Human Rights Council.
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Annex A.

Bangladesh's Existing Legal and Institutional Framework

The Disaster Management Act 2012

Section 2(11)(a) expressly lists heatwaves among the events that constitute a disaster. The Act provides for early warning, hazard-based disaster management plans, local disaster management committees, declaration of distressed areas, emergency measures, and relief and assistance to vulnerable groups. Sections 19 and 20 allow national and local policy and plans to address hazards and local risks; Sections 22 and 23 allow special measures in declared distressed areas; Section 27 prioritises support and risk reduction for ultra-poor and disadvantaged communities, including older people, women, children and persons with disabilities. However, the Act does not define a heatwave for operational purposes, or prescribe heat-index thresholds, alert levels, lead-agency duties, minimum services, worker protections, food-security measures or dedicated financing - legal recognition has not yet become a practical entitlement to early warning, safe water, cooling, income protection, food assistance or heat-resilient livelihood support.

The Standing Orders on Disaster 2019

The Standing Orders give the BMD a risk-reduction duty to monitor weather and provide one- to three-month forecasts on heatwaves and other hazards, and call for location-specific forecasting and sector-based applied weather services - but they do not establish heat-specific thresholds, a colour-coded alert system, a mandatory dissemination chain, or a standard package of action at each alert level; detailed warning-stage arrangements remain primarily designed for cyclones and floods.^[13]

The Standing Orders assign generic but useful sectoral duties. The Ministry of Food must consider disaster risks, maintain food reserves, monitor prices and expand food-friendly programmes. The Ministry of Agriculture and DAE must assess risk, promote disaster-resilient technologies, advise farmers and prepare contingency plans - but neither is required to issue heat-triggered crop and irrigation advice, adjust farm-work schedules, protect livestock and fisheries, maintain cold-chain continuity, monitor local markets, or safeguard nutrition for heat-affected households.^[14]

The Ministry of Labour and Employment must assess risks to industrial workers and develop worker-safety and compensation policies, but the Standing Orders do not establish maximum heat-exposure standards, work-rest-water-shade requirements, mandatory adjustments to working hours, heat-illness reporting, income protection, or adequate coverage for agricultural and informal workers.^[15]

The National Plan for Disaster Management 2021-2025

The Plan refers to climate-related extreme events, food security, social protection, agro-meteorological services and multi-hazard early warning, but its hazard profile identifies drought, salinity intrusion and cold wave without expressly listing heatwave. The draft identifies no heat-specific target, indicator, budget line, contingency plan, or accountable lead institution.

Sources

- [1] Kamruzzaman, M., Abdullah, A.Y.M., Islam, A.K.M.S., Talukder, A., Wahid, S., & Shahid, S. (2026). Diurnal asymmetry in heat stress intensification across Bangladesh, 1985–2024: Accelerated nighttime warming and emerging urban risk. *PLOS Climate*, 5(8).
- [2] UNEP. Limiting Overshoot – Navigating exceedance of 1.5°C and pathways towards return. 2 September 2026.
- [3] The Daily Star. Bangladesh Heat Story. Accessed September 2026.
- [4] World Meteorological Organization (WMO). El Niño Set to Become Very Strong, Raising Risks of Extreme Weather into 2027. Press Release, 3 September 2026.
- [5] Thomson Reuters Foundation. As rising heat shocks ruin rice crops, Bangladesh faces hunger risk. 28 May 2021.
- [6] Kroeger, C. (2023). Heat is associated with short-term increases in household food insecurity in 150 countries, and this is mediated by income. *Nature Human Behaviour*, 7, 1777–1786. University of Oxford.
- [7] PRAAN and KHANI (Bangladesh Food Security Network). Displaced, Denied: Right to Food in Satkhira's Climate-Displaced Communities — A Study of Food, Water, Housing, Livelihoods, Social Protection and Access to Remedy. PRAAN, 2026.
- [8] The Daily Star; Bangladesh heating up FASTER than before
- [9] World Bank Group. 2022. Bangladesh Country Climate and Development Report. CCDR Series.
- [10] FAO. The Status of Women in Agrifood Systems. Rome: Food and Agriculture Organization of the United Nations, 2023.
- [11] FAO. The Unjust Climate: Measuring the Impacts of Climate Change on the Rural Poor, Women and Youth. Rome: Food and Agriculture Organization of the United Nations, 2024.
- [12] Lakhoo, D.P., Brink, N., Chersich, M.F., et al. (2024). A systematic review and meta-analysis of heat exposure impacts on maternal, fetal and neonatal health. *Nature Medicine*, 31, 684–694.
- [13] Ministry of Disaster Management and Relief. Standing Orders on Disaster 2019, Bangladesh Meteorological Department functions, p. 184.
- [14] Standing Orders on Disaster 2019, Ministry of Food, pp. 163–166; Ministry of Agriculture and Department of Agricultural Extension, pp. 200–205.
- [15] Standing Orders on Disaster 2019, Ministry of Labour and Employment, p. 325.

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