



“They Don’t See What Heat Does to Our Bodies”

*Climate Change, Labor Rights, and the Cost of Fashion
in Karachi, Pakistan*

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Summary

“When I get very hot, I start sweating uncontrollably. My head begins pounding. Sometimes my vision becomes blurry. I have felt dizzy many times... There have been moments when I felt like I might faint, but stopping work is not an option. If I sit down or slow down too much, the supervisors scold us, and the contractor can cut our wages.”

— Muhammad Hunain, textile mill worker in Karachi, Pakistan

“Every year, temperatures rise, and every year workers’ bodies pay the price.”

— Mir Zulfiqar Ali, Executive Director of the Workers Education and Research Organization in Pakistan

As climate change accelerates and temperatures around the world continue to rise, summers in Karachi, Pakistan are growing longer, hotter, and more dangerous. Temperatures in the region now routinely climb past 38-40°C (100-104°F), with some areas of Sindh province recording highs above 52°C (126°F).¹ As Muhammad Hunain, a textile mill laborer who works in one of the city’s largest industrial neighborhoods, describes it: “In Karachi, people say we have only three seasons: hot, very hot, and extremely hot.”²

For workers like Hunain, the rising heat and humidity have together resulted in increasingly unsafe labor conditions. He explained:

[Management does] not track temperatures officially, but one of my colleagues sometimes checks on his mobile phone during the peak of hot days. It shows 45°C (113°F) outside. You can imagine how much hotter it becomes inside, where machinery, bodies, and fabric all trap heat.³

Hunain’s experience is part of a broader pattern affecting the city’s industrial workforce. Across Karachi’s garment sector, thousands of workers spend upwards of 12 hours each day engaging in hard physical labor through progressively hotter extremes, preparing clothing and home goods for export to international markets.

This report – based on interviews conducted in Karachi during October 2025 – documents how escalating temperatures, inadequate workplace protections, and systemic labor rights abuses intersect and together threaten workers’ health,

¹ Visual Crossing Corporation. Visual Crossing Historical Weather Data. 2022 - 2025, Karachi, Pakistan, <https://www.visualcrossing.com/>. Accessed 15 November 2025.; Reuters. (2024, May 27). *Pakistan temperatures cross 52C in heatwave*. Available via <https://www.reuters.com/world/asia-pacific/pakistan-temperatures-cross-52-c-heatwave-2024-05-27/>

² CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025.

³ CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025.

livelihoods, and basic rights. Our findings point to a consistent pattern of extreme workplace heat exposure, wage loss linked to heat-related illness, and a near-total absence of adequate heat management systems inside factories, providing a detailed account of how, as climate change accelerates, mass-market brands continue to profit from production models that leave workers dangerously exposed to climate risks.

Workers in Karachi told Climate Rights International they often feel suffocated while working through extremely hot temperatures inside factories and textile mills. Many reported chronic symptoms of heat stress, including dizziness, nausea, headaches, blurred vision, rapid heart rates, and muscle cramps. Hunain shared his own experience:

When the weather becomes extremely hot, which is now most of the year, it feels like my body is melting. The air inside the factory turns thick and suffocating. The heat gets trapped inside the building; it does not escape. Some days, breathing becomes difficult because there is no circulation of air.⁴

Others reported frequent fainting at work as a result of the heat, many of whom recounted fainting themselves or seeing their colleagues collapse on the job. As one worker told CRI:

Our job is standing work. By the end of the day, our legs swell, and we feel extreme exhaustion. In summer, many men and women faint.⁵

The intense physical toll of the heat often left workers feeling mentally and emotionally distressed. Both garment and mill workers described feeling fatigued, irritable, angry, distracted, and anxious while working during the hot season.

Workers reported that the physical and emotional burdens brought on by rising workplace temperatures also negatively impacted their livelihoods, describing how hot factory conditions often slowed their productivity, causing them to work less efficiently, fall ill more often, and lose wages due to missed work. Sardar Khan, for example, a mill worker who recalled fainting in the heat as recently as May 2025, explained:

I fainted [in the heat] a couple of times. It also happened to other people. I asked the contractor for leave and stayed home for two days. It was unpaid leave.⁶

⁴ CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025.

⁵ CRI interview with Munawar Siddiqui, Karachi, Pakistan, 25 October 2025.

⁶ CRI interview with Sardar Khan, Karachi, Pakistan, 25 October 2025.

For these workers – all of whom earn, at most, the minimum wage of \$40,000 PKR per month (USD\$142 as of November 2025), with many earning much less – even losing one day’s pay can destabilize their household budget. As one of the garment workers put it:

If I miss even one day, the deduction affects my whole month’s budgeting.⁷

But despite the growing risks, workers explained that both factory and mill authorities and the brands sourcing from them do little to protect them from the heat. Even in extreme conditions, production targets remain unchanged. One worker recounted the struggle:

[Factory managers] don’t change the [production] targets. They say, ‘The work must be finished.’ But they don’t see what heat does to our bodies.⁸

Many reported little to no ventilation in their workplaces, with some noting that their factories keep doors or windows closed during work hours. Others said their workplaces don’t even have fans. Hunain elaborated on the conditions in the mill where he works:

There are no fans, no cooling units, no ventilation. [Management says] fans cannot be installed because the cloth hanging from the ceiling blocks air circulation. So instead of fixing the layout or installing proper systems, they choose to do nothing. The workers are simply left to struggle.⁹

Local labor rights advocate and Executive Director of the Workers Education and Research Organization in Pakistan, Mir Zulfiqar Ali, described the situation plainly: “Every year, temperatures rise, and every year workers’ bodies pay the price.”¹⁰ He added: “Factories today are built to protect the product, not the people who create it.”¹¹

Workers further described how widespread labor rights violations compound these challenges, effectively preventing them from protecting themselves from the heat. Many told Climate Rights International of extremely low wages – around 32,000 PKR/month, equivalent to USD\$114 as of November 2025 – and payment structures that force them to continue working through dangerously hot conditions, even when feeling ill as a result of the heat. Others described strict restrictions on breaks,

⁷ CRI interview with Samina, Karachi, Pakistan, 28 October 2025.

⁸ CRI interview with Abdullah, Karachi, Pakistan, 27 October 2025.

⁹ CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025.

¹⁰ CRI interview with Mir Zulfiqar Ali, Karachi, Pakistan, 26 October 2025.

¹¹ CRI interview with Mir Zulfiqar Ali, Karachi, Pakistan, 26 October 2025.

harassment for slowing down, and fear of retaliation for resting or speaking up about the conditions. “Stopping work is not an option,” said Hunain. “If I sit down or slow down too much, the supervisors scold us, and the contractor can cut our wages.”¹²

Nearly all of the workers interviewed recounted inconsistent access to clean drinking water, with many describing workplace water sources as hot, unclean, and even “muddy.”¹³ One of the workers elaborated:

During the summer, the water is too hot to touch. It comes from metal tanks on the rooftop, so workers can’t even use it for ablutions [ritual washing] before prayers. We have to wait and wait until the water cools a little.¹⁴

And because bathroom breaks are either explicitly or implicitly discouraged, many reported limiting their water consumption to reduce their trips to the bathroom, leaving them dangerously dehydrated in the heat. “If anyone spends more than five minutes to drink water or use the washroom, the supervisor reprimands them,” said one worker.¹⁵ Another described the tension in simple terms:

Supervisors don’t like workers going [to the bathroom] again and again. So people avoid drinking water.¹⁶

Still others noted workplace rules prohibiting water bottles at workstations.

These difficult conditions are often made worse by inadequate medical support. Almost all of the workers reported limited access to medical care and medical leave, and many said fainting and other heat symptoms were treated casually, or even ignored altogether. One man told CRI:

If someone faints or gets sick, they send them home. No doctor, no checkup, nothing.¹⁷

Several workers reported barriers to unionization, leaving employees without formal mechanisms through which to collectively raise concerns or negotiate protections; and almost all commented on the near-total lack of safety training on heat risks. As Hunain put it:

¹² CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025.

¹³ CRI interview with Gulzar Ali, Karachi, Pakistan, 26 October 2025.

¹⁴ CRI interview with Gulzar Ali, Karachi, Pakistan, 26 October 2025.

¹⁵ CRI interview with Samina, Karachi, Pakistan, 28 October 2025.

¹⁶ CRI interview with Shaista, Karachi, Pakistan, 26 October 2025.

¹⁷ CRI interview with Muhammad Sagheer, Karachi, Pakistan, 27 October 2025.

We receive no information about heat symptoms or how to manage them. No posters, no instructions, no awareness, nothing. Whatever we know, we learn from each other.¹⁸

Many said they remain silent about these struggles due to fear of retaliation.

Corporate Responsibility

As rising temperatures increasingly threaten the health, safety, and livelihoods of workers in Karachi and across Pakistan, companies operating in the country and sourcing from its supply chains have a responsibility to prevent and address human rights harms, including climate-related harms, linked to their business activities.

Through open-source research, we traced the factories and mills in Karachi in which these unsafe conditions occurred to leading apparel and home goods brands that source from them, including H&M, Inditex (Zara), GAP, MANGO, ASOS, C&A, NA-KD, NEXT, and IKEA.¹⁹ All of the brands named here, with the exception of IKEA, are party to the International Accord for Health and Safety in the Garment and Textile Industry's Pakistan Accord. As of October 2025, the Pakistan Accord had received 167 worker complaints, among which temperature, heat stress, and drinking water quality were the most common issues raised.²⁰ While all of these companies have made public commitments to support workers' fundamental rights, those commitments are belied by the lived reality of workers on the ground.

Only one of the companies tied to the hazards and abuses detailed in this report – NEXT, one of Britain's most profitable retailers – told Climate Rights International that it currently has detailed heat protection guidelines for suppliers in place.²¹ Another, H&M, reported that it plans to introduce heat guidance in the coming year.²² But prior correspondence with Climate Rights International shows that H&M

¹⁸ CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025.

¹⁹ H&M, Mango, NEXT, and IKEA each confirmed in written correspondence to Climate Rights International (see Appendix) that they actively source from at least one of the factories or mills at which laborers interviewed for this investigation reported working. GAP was connected to at least two such facilities using OpenSupplyHub listings updated as of March 2025, and at least two interviewees independently stated that the factory at which they reported working manufactures clothing for GAP. C&A identified at least two of the relevant facilities as active suppliers in its OpenSupplyHub disclosures as of September 2025. Inditex listed three of these factories as active suppliers in OpenSupplyHub as of 2018, the most recent data available, and at least one interviewee reported that their factory produces clothing for Zara, an Inditex-owned brand. NA-KD identified at least one of the facilities as an active supplier via OpenSupplyHub data as of May 2024.

²⁰ See: International Accord, 2025. *Pakistan Accord: Supplier Briefing #8*. Accessed 22 November 2025, available via: <https://internationalaccord.org/pakistan-accord-supplier-briefing-8/>

²¹ Prakash, P. "How Next became the U.K.'s most successful clothing retailer with \$1.3 billion in profit — outpacing a struggling industry with its savvy e-commerce play." *Yahoo Finance*, 27 March 2025. Available via: <https://finance.yahoo.com/news/british-mega-retailer-whose-ceo-123313957.html>

²² H&M response to Climate Rights International's request for comment, 21 November 2025, on file with Climate Rights International.; H&M response to Climate Rights International's prior request for comment (regarding initial Bangladesh investigation), 4 July 2025, on file with Climate Rights International.

guidelines will recommend “taking local legal limits for maximum temperature for working into account,” which Pakistan has yet to establish.²³

While other brands named in the report have included provisions in their supplier codes of conduct or broader due diligence programs that require safe and healthy workplaces, these assurances fall short of adequately addressing growing, heat-specific occupational risks.

Climate Rights International’s investigation documented significant barriers to compliance with existing occupational health standards. Several of the brands pointed to inspections or third-party audits as evidence of oversight. But workers and experts interviewed for this report described routine preparations ahead of factory visits, like additional cleaning, water cooler restocking, and even the use of additional fans, designed to mask the reality of everyday working conditions.

Some of the companies identified maintain that they conduct at least some unannounced visits in an effort to address this particular issue and ensure inspection occurs under “typical operating conditions.” But in the absence of specific heat protection policies, as is the case for all but one brand named in this report, it is not clear that extreme heat impacts are even assessed during inspection, let alone remediated effectively. Other workers, mostly contract laborers working in textile mills, reported that they believe their workplaces are kept “off the books” to avoid inspections altogether.²⁴ Nearly all workers said that neither they nor their colleagues are included in any discussions with the inspection teams.

The hazards and abuses documented in this report are not isolated incidents, but are instead emblematic of how global fashion and textile supply chains externalize risk onto the world’s most vulnerable workers. Climate Rights International previously identified similar patterns of extreme temperature exposure, insufficient heat protections, and pervasive labor rights violations [in Dhaka, Bangladesh](#).²⁵ Researchers have produced similar findings in other garments hubs across South Asia.²⁶

²³ H&M response to Climate Rights International’s prior request for comment (regarding initial Bangladesh investigation), 4 July 2025, on file with Climate Rights International.

CRI interview with Gulzar Ali, Karachi, Pakistan, 26 October 2025

²⁵ Climate Rights International. “*My Body Is Burning*”: *Climate Change, Extreme Heat, and Labor Rights in Bangladesh*. July 2025. Available via: <https://cri.org/reports/my-body-is-burning-extreme-heat-and-labor-rights-in-bangladesh/>

²⁶ Das, A. (2025, November 16). *Women toiling in India’s insufferable heat face mounting toll on health*. The New York Times; Shivakumar, N., & Varshney, A. (2025, May 25). *India: Women garment workers paying the price for climate breakdown, enduring ‘pressure cooker’ conditions in factories, as brands persist with fast-pace production*. Business & Human Rights Resource Centre; “*Oppressive Heat*.” *Oppressive Heat*, www.oppressive-heat.org. Accessed 21 May 2025; Chea V, Chan S, Borzino N, Tan MSP, Lee JKW, Vongchanh K. Perceived impact of heat stress on health and productivity of tropical female garment workers- a comparison between cool

While the emergence of heat protection guidelines is an important first step, they are not yet the industry norm, and implementation remains a challenge. To be both credible and effective, corporate heat protection plans – both in Pakistan and across the broader fashion industry – need to move beyond general principles and incorporate actionable and measurable targets, including provisions for science-backed work-to-rest ratios, stronger enforcement and accountability mechanisms, and real-time monitoring of workplace temperatures.²⁷ Without these measures, safeguards may appear strong on the surface, but will ultimately fail to protect people in practice, leaving workers exposed to life-threatening temperatures on factory floors.

Climate Rights International spoke to David Birnbaum, a Strategic Planner for the global garment industry at The World Bank, who points out that there are two issues at play: sustainability and compliance. While sustainability is a motivator, compliance is the ultimate goal. Birnbaum says that the solution can't come from environmental teams alone, emphasizing that these issues will require a coordinated response:

The important thing is that the people who talk to [brand leadership] have got to be garment people. You don't just want the sustainability teams, you want the sourcing people. This is not just some theoretical or ethical thing; this is business. And we need professionals on all sides.²⁸

Birnbaum explained that both retailers and suppliers have a clear stake in the industry's climate risks, and as consumers become increasingly interested in sustainability, addressing these issues should be seen as an investment that will benefit brands, as much as it will workers:

Companies need a way out of this mess. They have to show consumers that they're sustainable. And working with suppliers will give them a way out.²⁹

Weak Government Oversight and Enforcement

The working conditions of garment and textile laborers in Pakistan are governed by a complex legal and policy matrix. This framework encompasses constitutional guarantees, provincial labor laws, occupational safety regulations, climate change

and hot months. BMC Public Health. 2025 Apr 25;25(1):1543. doi: 10.1186/s12889-025-22787-0. PMID: 40281560; PMCID: PMC12023358.

²⁷ Judd, Jason, et al. *Hot Air: How Will Fashion Adapt to Accelerating Climate Change?* Cornell University, Global Labor Institute, Dec. 2024. <https://www.ilr.cornell.edu/sites/default/files-d8/2024-12/gli-hot-air-4-december-2024.pdf>.

²⁸ CRI interview with David Birnbaum, 23 November 2025, on file with CRI.

²⁹ CRI interview with David Birnbaum, 23 November 2025, on file with CRI.

policies, and international commitments. Although these instruments collectively establish a foundation for protecting workers' health and safety, practical implementation is limited. Persistent regulatory gaps (including the absence of quantified regulations like mandatory work-to-rest ratios and maximum allowable temperature thresholds for safe work), inadequate enforcement, and the exclusion of informal workers together create a significant disconnect between legal provisions and conditions on the ground.

Workers interviewed by Climate Rights International consistently reported going without even the most basic protections, like safe drinking water, ventilation, and regular bathroom access. Collectively, their testimonies indicate that factories and textile mills in Karachi are repeatedly failing to meet legal requirements for safe indoor temperatures that promote “reasonable conditions of comfort” and injury prevention, as required by law.

Mir Zulfiqar Ali, Executive Director of the Workers Education and Research Organization in Pakistan, put it bluntly:

We [Sindh province] have a government safety and health policy, but on the ground it is almost never implemented.

International Accord for Health and Safety in the Textile and Garment Industry

The [International Accord](#) is a legally binding agreement between garment brands and trade unions that evolved out of the 2013 Accord on Fire and Building Safety in Bangladesh, which came in response to the [Rana Plaza disaster](#). The Accord has since developed into an international framework that facilitates the implementation of country-specific safety programs (CSSPs), including in Pakistan. All of the brands identified in this report, with the exception of IKEA, are signatories of the Accord.³⁰

Because the Accord's mandate was originally designed to address building, fire, structural, and boiler safety, it has not historically recognized extreme heat as one of its core occupational risks. In early September, Climate Rights International coordinated and sent to the Accord's Steering Committee a joint letter – signed by 44 labor rights, climate change, and sustainable fashion organizations – highlighting findings from our [previous investigation in Bangladesh](#), urging the organization to update its mandate to address climate-related workplace hazards, including extreme heat.³¹

³⁰ IKEA operates under its own independent code of conduct, called IWAY, and has yet to sign on to the International Accord. More detail is included in Section 7 of this report.

³¹ Climate Rights International. “Global Groups Urge International Accord to Protect Workers from Heat,” 3 September 2025. Available via: <https://cri.org/global-groups-urge-international-accord-to-protect-workers-from-heat/>

On September 12, 2025, following a discussion that made reference to that letter, the committee appears to have affirmed during the Pakistan renegotiations that heat stress does, in fact, fall “within the scope of the [Pakistan] Accord, including for inspections and remediation,” and agreed that the Secretariat and Technical Committee will “[develop a Protocol on heat stress](#) for the matter to be tackled on a systematic and preventive basis.”³² If this decision is confirmed, it would be a hugely important first step.

In response to a letter from Climate Rights International in advance of the publication of this report, the Spanish fashion retailer MANGO agreed to support the inclusion of heat as a “defined risk” within the revised Pakistan-Country Specific Safety Program and to “actively collaborate with Accord staff and ... suppliers to help ensure the proper supervision and implementation of this element within the new country program once it is renewed.”³³ MANGO should follow through on these commitments, and other brands named in this investigation and involved in the Accord should follow suit to ensure that heat is treated with the same seriousness, attention, and resources given to the Accord’s original safety pillars.

Key Recommendations

Key stakeholders, including the government, brands, and factory authorities, should work in coordination to advance the following preventative measures in an effort to better protect garment and textile mill workers from climate-related occupational risks:

- **Ensure workers can engage in adaptive behaviors during peak heat conditions.** The government, brands, factory owners, and supervisors should ensure that workers can rest more frequently, work more slowly, and/or modify work to avoid intense labor during the hottest times of day, without financial penalty or fear of retaliation. This will require, first, that workers are made aware of workplace hazards, including heat, and the relevant behavioral adaptation practices that can help protect them. In the words of one worker: “Even a 10-minute break in the afternoon would help our bodies recover.”³⁴
- **Guarantee access to clean, cool drinking water and safe sanitation for all workers.** Authorities should ensure that workers can hydrate as much as

³² Climate Rights International wrote to the Steering Committee of the International Accord on 24 November 2025 asking for clarification about this development, which was announced in a footnote of the September 2025 Steering Committee Meeting Minutes. At the time of publication, Climate Rights International had not received a response.

³³ MANGO response to Climate Rights International’s request for comment, 24 November 2025, on file with Climate Rights International.

³⁴ CRI interview with Sardar Khan, Karachi, Pakistan, 25 October 2025.

necessary throughout the workday and are never denied, or penalized for, water or bathroom breaks.

- **Strengthen realization of fundamental labor rights.** Authorities should work together to ensure that workers are provided the financial stability and employment protections necessary so that they will not feel obligated to work through dangerous conditions. This will require ensuring workers are able to earn living wages, and that they are paid sick leave in cases of heat-related injury or illness. Contract workers should receive comparable and necessary protections.
- **The government of Sindh should develop and enforce a provincial heat protection guideline for worker health and safety.** The guideline should include the above recommendations, as well as provisions for real-time environmental monitoring, science-backed work-to-rest ratios with mandatory rest during periods of high heat, and clear and quantifiable standards for indoor temperature and ventilation and associated reduced output or temporary work pauses. Guidance should include penalties for both non-compliant factories and the brands sourcing from them.
- **Brands sourcing from Pakistan and suppliers operating in the country should develop and enforce comprehensive heat-stress management plans across supply chains.** Guidance should include the same recommendations and provisions listed above. Policies should be legally-binding, communicated and made accessible to workers, and rolled out alongside improved purchasing practices that allow factories to adjust workloads to meet relevant safety requirements.

Worker participation will be critical to the success of these efforts. Heat stress policies are too often designed without input from those most exposed to risk. In an effort to challenge that pattern, Climate Rights International asked each worker about the tools and resources they need to better cope with and protect themselves from the heat at work. Their accounts and insights are reflected in the recommendations offered above (and in more detail in the recommendations listed at the end of this report), providing a clear and urgent call for change. In Hunain's words:

We are not asking for luxury, just basic rights. If the heat keeps rising every year, workers like us will suffer the most. We need fans, ventilation, fair wages, job security, and proper medical support. These are basic needs, not demands for comfort.³⁵

³⁵ CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025.

Methodology

This report is based on desk research and information collected during field research in Karachi, Pakistan during October 2025. Climate Rights International interviewed 12 people, including six garment workers, three mill workers, and three subject-matter experts, including a local labor rights researcher, a local urban climate resilience expert, and a strategic planner for the global garment industry.

CRI used a modified version of the HOTHAPS (High Occupational Temperature Health and Productivity Suppression) Research Protocol for qualitative studies (Component 3) to collect information about heat impacts on workers, current adaptation measures, barriers to further adaptation, and worker suggestions and needs as they relate to future heat management.³⁶ The interview guide was reviewed by and refined in collaboration with researchers in the fields of climate, labor, and public health prior to use.

All participants provided verbal consent prior to the start of each interview. Participants were free to decline to answer specific questions and to stop the interview at any time. In an effort to protect against retaliation, workers are referred to using pseudonyms throughout the report.

We used open-source data via corporate supplier lists and OpenSupplyHub to link the factories at which the interviewed laborers work to multinational fashion and home goods brands sourcing from them, including H&M, Inditex (Zara), GAP, MANGO, ASOS, C&A, NA-KD, NEXT, and IKEA. All companies were made aware of this research prior to publication and were given an opportunity to respond.

Climate Rights International also wrote to the International Accord, the Karachi Chamber of Commerce and Industry, and several key provincial and municipal government agencies, including the Sindh Ministry of Labour, Department of Health, Environmental Protection Agency, Industries and Commerce Department, Building Control Authority (SBCA), and Human Rights Commission, as well as the Provincial Disaster Management Authority (PMDA), and the Karachi Metropolitan Corporation.

All communications are included in the appendix.

³⁶ Kjellstrom, Tord, and Ingvar Holmér. *The Hothaps Protocol: Assessment of Climate Conditions for Human Health and Work Performance*. ClimateCHIP, 2021, <https://climatechip.org/HothapsProtocol>. Accessed 28 Apr. 2025.

I. Climate Change and Rising Temperatures

The world is hotter than ever: 2024 set a new benchmark for global temperatures, and early data suggests 2025 will not fall far behind.³⁷ The past ten years are officially the ten warmest in recorded history.³⁸ In 2024, for the first time, the global mean temperature in a single year surpassed the pre-industrial average by 1.5°C, the internationally agreed-upon threshold cited by scientists as critical to avoid the most severe impacts of climate change.³⁹ The United Nations Intergovernmental Panel on Climate Change (IPCC), the authoritative body on climate science, has consistently indicated with high confidence that anthropogenic climate change is the primary driver of rising global averages in recent history.⁴⁰

In addition to increasing average temperatures, heatwaves, or prolonged periods of high temperatures outside the relative norm of a specific location, are becoming both more frequent and more intense across most land regions.⁴¹ Human-driven climate change is similarly amplifying these events, making them deadlier and more damaging.⁴²

These changes are ushering in a new era of escalating human rights emergencies, in which rising temperatures and resulting impacts are both creating new challenges and exacerbating existing inequalities.⁴³ As global temperatures continue to rise –

³⁷ World Meteorological Organization. *WMO Confirms 2024 as Warmest Year on Record at About 1.55°C Above Pre-Industrial Level*. 10 Jan. 2025; World Meteorological Organization, “2025 Set to Be Second or Third Warmest Year on Record, Continuing Exceptionally High Warming Trend”, WMO News, Nov. 6, 2025. Much of the text in this section was originally published in: “My Body Is Burning”: Climate Change, Extreme Heat, and Labor Rights in Bangladesh. Climate Rights International. July 21, 2025.

³⁸ World Meteorological Organization. *WMO Confirms 2024 as Warmest Year on Record at About 1.55°C Above Pre-Industrial Level*. 10 Jan. 2025.

³⁹ Copernicus Climate Change Service. *Copernicus Climate Change Service 2024 Global Climate Report*. 2025, <https://climate.copernicus.eu/>; World Meteorological Organization. *WMO Confirms 2024 as Warmest Year on Record at About 1.55°C Above Pre-Industrial Level*. 10 Jan. 2025.

⁴⁰ IPCC, 2023: *Climate Change 2023: Synthesis Report*. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 35-115.

⁴¹ IPCC, 2023: *Climate Change 2023: Synthesis Report*. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 35-115.

⁴² Clarke, B., Otto, F., Barnes, C., & Vahlberg, M. (2025). *Extraordinary March heatwave in Central Asia up to 10 °C hotter in a warming climate*. World Weather Attribution; World Weather Attribution, *Deadly Mediterranean Heatwave Would Not Have Occurred Without Human-Induced Climate Change* (2024); Mariam Zachariah, Arulalan T., Krishna AchutaRao, Fahad Saeed, Roshan Jha, Manish K. Dhasmana, Arpita Mondal, Rémy Bonnet, Robert Vautard, Sjoukje Philip, Sarah Kew, Maja Vahlberg, Roop Singh, Julie Arrighi, Dorothy Heinrich, Lisa Thalheimer, Carolina Pereira Marghidan, Aditi Kapoor, Maarten van Aalst, Emmanuel Raju, Sihan Li, Jingru Sun, Gabriel Vecchi, Wenchang Yang, Mathias Hauser, Dominik L. Schumacher, Sonia I. Seneviratne, Luke J. Harrington & Friederike E.L. Otto, *Climate Change Made Devastating Early Heat in India and Pakistan 30 Times More Likely*, World Weather Attribution (2022).

⁴³ Climate Rights International. “*I Can’t Cool: Extreme Heat and Human Rights in the Context of Climate Change*,” February 2024. Available via: <https://cri.org/reports/i-cant-cool/>.

fueled by record greenhouse gas emissions, widespread deforestation, and periodic El Niño events – those least responsible and least protected will bear the most significant burdens.⁴⁴ Workers, especially those in vulnerable sectors and in developing countries, are on the frontlines of this crisis.

Extreme Heat and Human Health

Extreme heat, driven in large part by climate change, is an urgent and growing threat to human health.⁴⁵ High temperatures are already causing illness and death worldwide, and these impacts are projected to increase.⁴⁶

Maintaining a core body temperature of around 37°C (98.6°F) is necessary for the human body to function normally.⁴⁷ When we get too hot, blood vessels near our skin expand in order to increase blood flow to the surface and release excess heat. In combination with sweating, this response helps to move heat away from our core. This process, though, can strain the cardiovascular system by forcing the heart to work harder to maintain circulation. To keep up, blood flow is sometimes diverted away from important organs like the brain, kidneys, and liver, which can potentially lead to dizziness, organ stress, and illness.⁴⁸

Continued exposure to extreme heat can lead to a broad array of adverse health effects, including dehydration, headache, fatigue, fainting, electrolyte imbalances, diarrhea and stomach pain, muscle cramping and swelling, respiratory problems, and potentially fatal heat stroke.⁴⁹

⁴⁴ Climate Rights International. “*I Can’t Cool: Extreme Heat and Human Rights in the Context of Climate Change*,” February 2024. Available via: <https://cri.org/reports/i-cant-cool/>.

⁴⁵ Ebi K, Capon A, Berry P, Broderick C, de Dear R, Havenith G. “Hot weather and heat extremes: health risks,” *The Lancet*, 2021 August.

⁴⁶ IPCC, 2023: *Climate Change 2023: Synthesis Report*. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 35-115.

⁴⁷ Manal Azzi, Andreas Flouris, Halshka Graczyk, Balint Nafradi, and Natasha Scott, eds. Heat at work: Implications for safety and health, a global review of the science, policy, and practice. International Labour Organization, July 2024: <https://www.ilo.org/publications/heat-work-implications-safety-and-health>

⁴⁸ Cramer MN, Gagnon D, Laitano O, Crandall CG. Human temperature regulation under heat stress in health, disease, and injury. *Physiol Rev.* 2022 Oct 1;102(4):1907-1989. doi: 10.1152/physrev.00047.2021. Epub 2022 Jun 9. PMID: 35679471; PMCID: PMC9394784; Chapman CL, Schlader ZJ. Assessing the risk of acute kidney injury following exercise in the heat: Timing is important: Comment on: Chapman, C.L., Johnson, B.D., Vargas, N.T., Hostler, D, Parker, M.D., and Schlader, Z.J. Hyperthermia and dehydration during physical work in the heat both contribute to the risk of acute kidney injury, *J Appl Physiol* (1985), 2020. DOI: <https://doi.org/10.1152/jappphysiol.00787.2019>. Temperature (Austin). 2020 Mar 21;7(4):304-306. doi: 10.1080/23328940.2020.1741333. PMID: 33251279; PMCID: PMC7678927; Cramer MN, Gagnon D, Laitano O, Crandall CG. Human temperature regulation under heat stress in health, disease, and injury. *Physiol Rev.* 2022 Oct 1;102(4):1907-1989. doi: 10.1152/physrev.00047.2021. Epub 2022 Jun 9. PMID: 35679471; PMCID: PMC9394784; Chalise SN, Mirza E, Malik R. Heat Stroke Leading to a Fatal Outcome. *Cureus.* 2023 Jan 1;15(1):e33226. doi: 10.7759/cureus.33226. PMID: 36733559; PMCID: PMC9889101.

⁴⁹ Crowe Jennifer, Knechtle Beat, Rojas-Valverde Daniel, Acute and long-term health issues of occupational exposure to heat and high physical loads, *Frontiers in Physiology*, Volume 14 - 2023, DOI=10.3389/fphys.2023.1304229.

Dehydration from excessive heat can be dangerous for many of our vital organs and, in particular, our kidneys. When the body is dehydrated, the brain sends a signal to reduce blood circulation to the kidneys in order to avoid losing fluid through urination. However, when their blood supply is reduced, the kidneys become deprived of oxygen and kidney cells are damaged. This can cause acute kidney disease or, in extreme cases, kidney failure.⁵⁰

Hotter-than-average temperatures can also aggravate chronic conditions, including cardiovascular, respiratory, kidney, and diabetes-related diseases.⁵¹ Ambient heat exposure increases death rates in 90 percent of the world's leading causes of death, including some types of heart disease, stroke, COPD, lower respiratory infections, Alzheimer's disease and other dementias, lung cancers, diabetes, and diarrheal disease.⁵² And although heat-related injuries and illnesses are largely undiagnosed and underreported worldwide, studies show a significant increase in the risk of both hospitalization and death when patients with chronic diseases are exposed to excessive temperatures.⁵³

The amount of heat stress experienced by a person depends on a variety of factors, including the temperature, humidity, and air flow of a person's environment, as well as the amount of direct sunlight exposure they experience, their metabolism, and the amount of clothing they wear.⁵⁴ These factors may vary greatly person to person and place to place.

Humidity, in particular, can compound the health risks of heat by compromising the body's ability to regulate temperature by sweating. Sweating cools the body by releasing heat through evaporation, but as humidity increases and the air becomes more saturated with moisture, it becomes more difficult for sweat to evaporate off the skin. And when sweat can't evaporate, the body can't cool itself.

High nighttime temperatures can further exacerbate the risks of extreme heat by preventing the body from recovering overnight. When temperatures stay elevated through the evening, so too does the body's core temperature, which leaves the

⁵⁰ Chapman CL, Schlader ZJ. Assessing the risk of acute kidney injury following exercise in the heat: Timing is important: Comment on: Chapman, C.L., Johnson, B.D., Vargas, N.T., Hostler, D, Parker, M.D., and Schlader, Z.J. Hyperthermia and dehydration during physical work in the heat both contribute to the risk of acute kidney injury, *J Appl Physiol* (1985), 2020. DOI: <https://doi.org/10.1152/jappphysiol.00787.2019>. Temperature (Austin). 2020 Mar 21;7(4):304-306. doi: 10.1080/23328940.2020.1741333. PMID: 33251279; PMCID: PMC7678927.

⁵¹ Ebi K, Capon A, Berry P, Broderick C, de Dear R, Havenith G. "Hot weather and heat extremes: health risks," *The Lancet*, 2021 August: [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(21\)01208-3/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)01208-3/fulltext)

⁵² Global Heat Health Information Network, "Heat and Health," 2025: <https://ghhin.org/heat-and-health/>

⁵³ Global Heat Health Information Network, "Heat and Health," 2025: <https://ghhin.org/heat-and-health/>

⁵⁴ Ebi K, Capon A, Berry P, Broderick C, de Dear R, Havenith G. "Hot weather and heat extremes: health risks," *The Lancet*, 2021 August: [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(21\)01208-3/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)01208-3/fulltext)

heart and other key organs under continued stress.⁵⁵ Hot nights can also disrupt sleep patterns, causing sleep deprivation, which can further increase the risk of illness and death.⁵⁶

Extreme heat also takes a toll on mental health.⁵⁷ High ambient temperatures not only fuel feelings of irritability, anger, and distress, but may also exacerbate mental illnesses, such as anxiety, schizophrenia, and depression – and increase the risk of suicide.⁵⁸

In addition to the more direct impacts of heat exposure, high temperatures can also negatively impact and alter human behavior. Health research increasingly shows a correlation between high temperatures and increased instances of interpersonal violence, including both physical and sexual assaults.⁵⁹ Furthermore, studies suggest a rise in online hate speech during heatwaves.⁶⁰

Vulnerability to heat is determined by both physiological factors, like age and health status, and social determinants, like occupational and socioeconomic conditions.⁶¹ Those most at risk include children, pregnant people, older people, people with disabilities, outdoor workers and indoor workers without access to cooling, incarcerated people, people living in poverty, and other marginalized groups.⁶²

⁵⁵ He C, Breitner S, Zhang S, Huber V, Naumann M, Traidl-Hoffmann C, Hammel G, Peters A, Ertl M, Schneider A. Nocturnal heat exposure and stroke risk. *Eur Heart J*. 2024 Jun 28;45(24):2158-2166. doi: 10.1093/eurheartj/ehae277. PMID: 38768958; PMCID: PMC11212822.

⁵⁶ Guo Y, Chan K, Liu H, Wong E, Ho K. The risk of hospitalization associated with hot nights and excess nighttime heat in a subtropical metropolis: a time-series study in Hong Kong, 2000–2019. *The Lancet Regional Health*, October 2024: [https://www.thelancet.com/journals/lanwpc/article/PIIS2666-6065\(24\)00162-7/fulltext](https://www.thelancet.com/journals/lanwpc/article/PIIS2666-6065(24)00162-7/fulltext); Obradovich N, Migliorini R, Mednick SC, Fowler JH. Nighttime temperature and human sleep loss in a changing climate. *Sci Adv*. 2017 May 26;3(5):e1601555. doi: 10.1126/sciadv.1601555. PMID: 28560320; PMCID: PMC5446217.

⁵⁷ Mullins JT, White C. Temperature and mental health: Evidence from the spectrum of mental health outcomes. *J Health Econ*. 2019 Dec; 68:102240. doi: 10.1016/j.jhealeco.2019.102240. Epub 2019 Oct 4. PMID: 31590065.

⁵⁸ Obradovich N, Migliorini R, Paulus MP, Rahwan I. Empirical evidence of mental health risks posed by climate change. *Proc Natl Acad Sci U S A*. 2018 Oct 23;115(43):10953-10958. doi: 10.1073/pnas.1801528115. Epub 2018 Oct 8. PMID: 30297424; PMCID: PMC6205461; Thompson R, Hornigold R, Page L, Waite T. Associations between high ambient temperatures and heat waves with mental health outcomes: a systematic review. *Public Health*. 2018 Aug; 161:171-191. doi: 10.1016/j.puhe.2018.06.008. Epub 2018 Jul 12. PMID: 30007545.

⁵⁹ Mahendran, Rahini et al. Interpersonal Violence Associated with Hot Weather, *The Lancet Planetary Health*, Volume 5, Issue 9, e571 - e572.

⁶⁰ Stechemesser, Annika et al. Temperature impacts on hate speech online: evidence from 4 billion geolocated tweets from the USA. *The Lancet Planetary Health*, Volume 6, Issue 9, e714 - e725.

⁶¹ Heat and Health," World Health Organization, 2024 May: <https://www.who.int/news-room/fact-sheets/detail/climate-change-heat-and-health>

⁶² Global Heat Health Information Network, "Heat and Health," 2025: <https://ghhin.org/heat-and-health/>

Importantly, the health impacts of heat are predictable and – according to the World Health Organization – largely preventable via specific public health policies and multi-sectoral interventions.⁶³

Worker Vulnerability to Heat

The impacts of heat are especially concerning for certain groups of already marginalized workers – particularly those who perform physical labor outdoors or work indoors without adequate cooling systems – because they may be exposed to high temperatures for longer periods of time than the general population.⁶⁴ These workers face not only the acute health risks of heat exposure, but also long-term consequences, such as chronic kidney disease and other serious health conditions. The risks of high heat exposure for workers may be further compounded by workplace conditions and policies that limit behavioral changes that can reduce body temperature, for example taking short breaks or reducing work intensity.⁶⁵

Increasing daily temperatures and the rising frequency and severity of heatwaves are together already having serious impacts on the safety and health of workers in all regions of the globe.⁶⁶ A recent analysis of 30 countries found that almost one in three workers exposed to heat stress on the job experienced negative health effects.⁶⁷

Occupational heat exposure also poses indirect risks, as high ambient temperatures can significantly raise the risk of workplace injuries and accidents.⁶⁸ High temperatures can fuel feelings of irritation, anger, and emotional stress; increase sweating on the hands and face; fog up glasses and goggles; cause workers to remove protective gear; and overheat equipment, all of which can increase the risk of workplace accidents.⁶⁹ Moreover, poorly designed personal protective equipment

⁶³ Heat and Health,” World Health Organization, 2024 May: <https://www.who.int/news-room/fact-sheets/detail/climate-change-heat-and-health>

⁶⁴ Manal Azzi, Andreas Flouris, Halshka Graczyk, Balint Nafradi, and Natasha Scott. “Heat at Work: Implications for Safety and Health, A Global Review of the Science, Policy, and Practice,” 2024 July, International Labour Organization: <https://www.ilo.org/publications/heat-work-implications-safety-and-health>

⁶⁵ Lucas RAI, Epstein Y, Kjellstrom T. Excessive occupational heat exposure: a significant ergonomic challenge and health risk for current and future workers. *Extreme Physiol Med.* 2014;3(1):14. doi:10.1186/2046-7648-3-14

⁶⁶ Mora, C., Dousset, B., Caldwell, I. et al. Global risk of deadly heat. *Nature Clim Change* 7, 501–506 (2017). <https://doi.org/10.1038/nclimate3322>

⁶⁷ Flouris AD, Dinas PC, Ioannou LG, Nybo L, Havenith G, Kenny GP, Kjellstrom T. Workers' health and productivity under occupational heat strain: a systematic review and meta-analysis. *Lancet Planet Health.* 2018 Dec;2(12):e521-e531. doi: 10.1016/S2542-5196(18)30237-7. PMID: 30526938.

⁶⁸ Syeda Hira Fatima, Paul Rothmore, Lynne C. Giles, Blesson M. Varghese, Peng Bi, Extreme heat and occupational injuries in different climate zones: A systematic review and meta-analysis of epidemiological evidence, *Environment International*, Volume 148, 2021, 106384, ISSN 0160-4120, <https://doi.org/10.1016/j.envint.2021.106384>; Spector JT, Masuda YJ, Wolff NH, Calkins M, Seixas N. Heat Exposure and Occupational Injuries: Review of the Literature and Implications. *Curr Environ Health Rep.* 2019 Dec;6(4):286-296. doi: 10.1007/s40572-019-00250-8. PMID: 31520291; PMCID: PMC6923532.

⁶⁹ Manal Azzi, Andreas Flouris, Halshka Graczyk, Balint Nafradi, and Natasha Scott. “Heat at Work: Implications for Safety and Health, A Global Review of the Science, Policy, and Practice,” 2024 July, International Labour

(PPE) can add to heat stress, which can cause some workers to remove protective gear, in turn increasing their vulnerability to injuries.⁷⁰ A recent meta-analysis of 22 million occupational injuries found that injuries increased by one percent for every 1°C increase in temperature above relative thresholds; during heatwaves, injuries spiked by 17.4 percent.⁷¹

Though there exists widespread underreporting of heat illness in the workplace, recent research by the International Labor Organization (ILO) estimates that at least 2.41 billion workers – more than 70 percent of the global workforce – are exposed to excessive heat on the job each year.⁷² These exposures result in millions of occupational injuries and thousands of deaths annually.⁷³ Notably, the large majority of occupational injuries linked to excessive heat exposure occur outside of a heatwave, underscoring the chronic risks associated with workplace heat exposure.⁷⁴

Occupational heat exposure can also reduce work capacity and productivity, in turn compounding the health and economic risks faced by workers.⁷⁵ In 2022, for example, heat exposure resulted in a loss of 490 billion potential labor hours

Organization: <https://www.ilo.org/publications/heat-work-implications-safety-and-health>; Nunfam VF, Van Etten EJ, Oosthuizen J, Adusei-Asante K, Frimpong K. Climate change and occupational heat stress risks and adaptation strategies of mining workers: Perspectives of supervisors and other stakeholders in Ghana. *Environ Res.* 2019 Feb; 169:147-155. doi: 10.1016/j.envres.2018.11.004. Epub 2018 Nov 5. PMID: 30458350.

⁷⁰ Flouris, Halshka Graczyk, Balint Nafradi, and Natasha Scott. "Heat at Work: Implications for Safety and Health, A Global Review of the Science, Policy, and Practice," 2024 July, International Labour Organization: <https://www.ilo.org/publications/heat-work-implications-safety-and-health>; Lundgren K, Kuklane K, Gao C, Holmér I. Effects of heat stress on working populations when facing climate change. *Ind Health.* 2013;51(1):3-15. doi: 10.2486/indhealth.2012-0089. PMID: 23411752; Rowlinson, Steve & Jia, Andrea & Li, Baizhan & Ju, Chuanjing. (2014). Management of climatic heat stress risk in construction: A review of practices, methodologies, and future research. *Accident Analysis & Prevention.* 66. 187–198. 10.1016/j.aap.2013.08.011

⁷¹ Fatima S, Rothermore P, Giles L, Varghese B, Bi P. "Extreme heat and occupational injuries in different climate zones: A systematic Review and meta-analysis of epidemiological evidence," *Environment International*, 2021 March: <https://www.sciencedirect.com/science/article/pii/S0160412021000088?via%3Dihub>

⁷² Abokhashabah, Tarek & Jamoussi, Bassem & Summan, Ahmed & Abdelfattah, Ezz & Ahmad, Ijaz. (2020). A review of occupational exposure to heat stress, its health effects and controls among construction industry workers, A case of Jeddah, KSA. *International Journal of Biosciences (IJB).* 35-45. 10.12692/ijb/17.1.35-45; Manal Azzi, Andreas Flouris, Halshka Graczyk, Balint Nafradi, and Natasha Scott. "Heat at Work: Implications for Safety and Health, A Global Review of the Science, Policy, and Practice," 2024 July, International Labour Organization: <https://www.ilo.org/publications/heat-work-implications-safety-and-health>

⁷³ Manal Azzi, Andreas Flouris, Halshka Graczyk, Balint Nafradi, and Natasha Scott. "Heat at Work: Implications for Safety and Health, A Global Review of the Science, Policy, and Practice," 2024 July, International Labour Organization: <https://www.ilo.org/publications/heat-work-implications-safety-and-health>

⁷⁴ Manal Azzi, Andreas Flouris, Halshka Graczyk, Balint Nafradi, and Natasha Scott. "Heat at Work: Implications for Safety and Health, A Global Review of the Science, Policy, and Practice," 2024 July, International Labour Organization: <https://www.ilo.org/publications/heat-work-implications-safety-and-health>

⁷⁵ Cheveldayoff P, Chowdhury F, Shah N, Burow C, Figueiredo M, et al. (2023) Considerations for occupational heat exposure: A scoping review. *PLOS Climate* 2(9): e0000202. <https://doi.org/10.1371/journal.pclm.0000202>; Flouris AD, Dinas PC, Ioannou LG, et al. Workers' health and productivity under occupational heat strain: a systematic review and meta-analysis. *Lancet Planet Health.* 2018;2(12): e521-e531. doi:10.1016/S2542-5196(18)30237-7

worldwide, meaning each worker in the world lost an average of 143 potential hours of labor capacity.⁷⁶ Over 1.3 billion workers, equal to 39 percent of the global workforce, experienced losses greater than that, the large majority of whom work in low- and middle-income countries.⁷⁷ Some estimates show that globally, humid heat “may currently be associated with over 650 billion hours of annual lost labor,” equivalent to roughly 148 million full-time jobs.⁷⁸ Evidence suggests that exposure to heat and associated productivity losses may increase rights-related harms experienced on the job, such as harassment, abuse, and restrictions surrounding sanitation rights, including bathroom access.⁷⁹

Extreme heat affects both indoor and outdoor workers.⁸⁰ Outdoor workers who do physical labor on the job and those who work indoors without air conditioning or appropriate ventilation – like some garment workers – are among those at high risk of heat-related injury and illness.⁸¹ Without adequate protection, these workers will continue to experience increased vulnerability to heat-related illness and related long-term health complications.

Workers in low-resource settings, in particular, will experience the worst of the growing extreme heat crisis, as high ambient temperatures, limited access to cooling, and strenuous physical labor make heat stress increasingly difficult to avoid. And because workers in these regions often lack the financial, social, and political resources necessary to mitigate the effects of heat, the risks will be even more

⁷⁶ Romanello M, Napoli C di, Green C, et al. The 2023 report of the Lancet Countdown on health and climate change: the imperative for a health-centered response in a world facing irreversible harms. *The Lancet*. doi:10.1016/S0140-6736(23)01859-7

⁷⁷ Romanello M, Napoli C di, Green C, et al. The 2023 report of the Lancet Countdown on health and climate change: the imperative for a health-centered response in a world facing irreversible harms. *The Lancet*. doi:10.1016/S0140-6736(23)01859-7

⁷⁸ Parsons, L. A., Masuda, Y. J., Kroeger, T., Shindell, D., Wolff, N. H., & Spector, J. T. (2022). Global labor loss due to humid heat exposure is underestimated for outdoor workers. *Environmental Research Letters*, 17(1), 014050. <https://doi.org/10.1088/1748-9326/ac3dae>

⁷⁹ Laurel Anderson Hoffner JS. Turning up the Heat: Exploring Potential Links between Climate Change and Gender-Based Violence and Harassment in the Garment Sector.; 2021. Accessed December 10, 2023. http://www.ilo.org/global/publications/working-papers/WCMS_792246/lang--en/index.htm; Yeasmin F, Rutherford S, Bach A, et al. Managing heat stress among Bangladesh ready-made clothing workers, Global Disaster Preparedness Center, Global Heat Health Information Network (2022); Venugopal V, Rekha S, Manikandan K, et al. Heat stress and inadequate sanitary facilities at workplaces – an occupational health concern for women? *Glob Health Action*. 2016; 9:10.3402/ghav9.31945. doi:10.3402/ghav9.31945

⁸⁰ Tord Kjellstrom, Nicolas Maître, Catherine Saget, Matthias Otto and Tahmina Karimova, Working on a Warming Planet: The Impact of Heat Stress on Labour Productivity and Decent Work, International Labour Organization, July 2019: <https://www.ilo.org/publications/major-publications/working-warmer-planet-effect-heat-stress-productivity-and-decent-work>

⁸¹ Tord Kjellstrom, Nicolas Maître, Catherine Saget, Matthias Otto and Tahmina Karimova, Working on a Warming Planet: The Impact of Heat Stress on Labour Productivity and Decent Work, International Labour Organization, July 2019: <https://www.ilo.org/publications/major-publications/working-warmer-planet-effect-heat-stress-productivity-and-decent-work>

severe.⁸² These dynamics are particularly pronounced in Asia, where almost three-quarters of the workforce is regularly exposed to excessive heat at work.⁸³

As the world wades deeper into the climate emergency, the frequency and intensity of heat-related hazards will only continue to increase, further endangering the health, safety, and livelihoods of billions of workers.

⁸² Alizadeh, M. R., Abatzoglou, J. T., Adamowski, J. F., Prestemon, J. P., Chittoori, B., Akbari Asanjan, A., & Sadegh, M. (2022). Increasing heat-stress inequality in a warming climate. *Earth's Future*, 10, e2021EF002488. <https://doi.org/10.1029/2021EF002488>; Edward W. Ansah, Emmanuel Ankomah-Appiah, Mustapha Amodu, Jacob O. Sarfo, Climate change, health and safety of workers in developing economies: A scoping review, *The Journal of Climate Change and Health*, Volume 3, 2021, 100034, ISSN 2667-2782, <https://doi.org/10.1016/j.joclim.2021.100034>.

⁸³ Manal Azzi, Andreas Flouris, Halshka Graczyk, Balint Nafradi, and Natasha Scott. "Heat at Work: Implications for Safety and Health, A Global Review of the Science, Policy, and Practice," 2024 July, International Labour Organization: <https://www.ilo.org/publications/heat-work-implications-safety-and-health>

II. Worker Vulnerability to Heat in Pakistan

The challenges brought on by workplace heat exposure are already visible across South Asia, which is projected to experience some of the highest increases in average annual temperatures throughout the century. Pakistan is among the “Critical 9” countries with the greatest number of people at high heat-related risk.⁸⁴

Pakistan is a large and diverse country, home to over 250 million people and over 70 language dialects.⁸⁵ It shares borders with India, China, Afghanistan, and Iran, with a sizable coastline along the Arabian Sea. Although Pakistan is responsible for just one percent of global greenhouse gas emissions, the country faces some of the world’s most severe climate challenges, including glacial melt, extreme heat, drought, flooding, and displacement.⁸⁶ According to several indices, Pakistan regularly ranks among the top ten most climate-vulnerable countries in the world.⁸⁷

Over the last century, the average temperature in Pakistan has risen by more than 1.6°C, exceeding the global average of 1.1°C.⁸⁸ In recent years, Pakistan has experienced record-breaking heatwaves; as of 2017, the frequency of heatwaves had increased fivefold over the previous three decades.⁸⁹ Temperatures reported in some regions, including Sindh – where all of the interviews for this report took place – have reached well above 50°C (122°F). These heatwaves, together with the rapid urbanization and deforestation occurring across the country, have strained Pakistan’s public health systems, resulting in serious human impacts.

⁸⁴ Asya Dimitrova, Vijendra Ingole, Xavier Basagaña, Otavio Ranzani, Carles Milà, Joan Ballester, Cathryn Tonne, Association between ambient temperature and heat waves with mortality in South Asia: Systematic review and meta-analysis, *Environment International*, Volume 146, 2021, 106170, ISSN 0160-4120, <https://doi.org/10.1016/j.envint.2020.106170>; Garcia, et al. A. Chilling Prospects 2022: Tracking Sustainable Cooling for All. Published online 2022. <https://www.seforall.org/system/files/2022-07/seforall-chilling-prospects-2022.pdf>

⁸⁵ World Population Review. (2025). *Pakistan country profile*. Accessed via <https://worldpopulationreview.com/countries/pakistan>; Ethnologue. (n.d.). *Pakistan* — Country Profile. In *Ethnologue: Languages of the World*. Accessed [14 November 2025], via <https://www.ethnologue.com/country/PK/>

⁸⁶ Muhammad Adnan, Baohua Xiao, Shaheen Bibi, Peiwen Xiao, Peng Zhao, Haiyan Wang, Addressing current climate issues in Pakistan: An opportunity for a sustainable future, *Environmental Challenges*, Volume 15, 2024, 100887, ISSN 2667-0100, <https://doi.org/10.1016/j.envc.2024.100887>.

⁸⁷ Ghani, F. (2025, September 19). ‘Crisis of justice’ as floods devastate: Pakistan’s climate change minister. Al Jazeera. Accessed via <https://www.aljazeera.com/news/2025/9/19/impact-of-climate-change-a-harsh-reality-facing-pakistan> Al Jazeera; Eckstein, D., Künzel, V., Schäfer, L., & Wingses, M. (2019). *Global Climate Risk Index 2020*. Germanwatch. Accessed via https://www.germanwatch.org/sites/germanwatch.org/files/20-2-01e%20Global%20Climate%20Risk%20Index%202020_16.pdf; Food and Agriculture Organization of the United Nations. (2024, April). *Leveraging Post-Disaster Needs Assessments (PDNA) to inform recovery of agri-food systems in Pakistan* (Submission by FAO). UNFCCC. Accessed via <https://unfccc.int/sites/default/files/resource/Submission%20by%20FAO%20Pakistan.pdf>

⁸⁸ Koons, E. (2024, June 26). *Heat wave in Pakistan 2024: A scorching reality*. Energy Tracker Asia. <https://energytracker.asia/heat-wave-in-pakistan>

⁸⁹ Asian Development Bank. (2017). *Climate change profile of Pakistan* (TCS 178761). <https://dx.doi.org/10.22617/TCS178761>

HEATWAVE RISK ANALYSIS

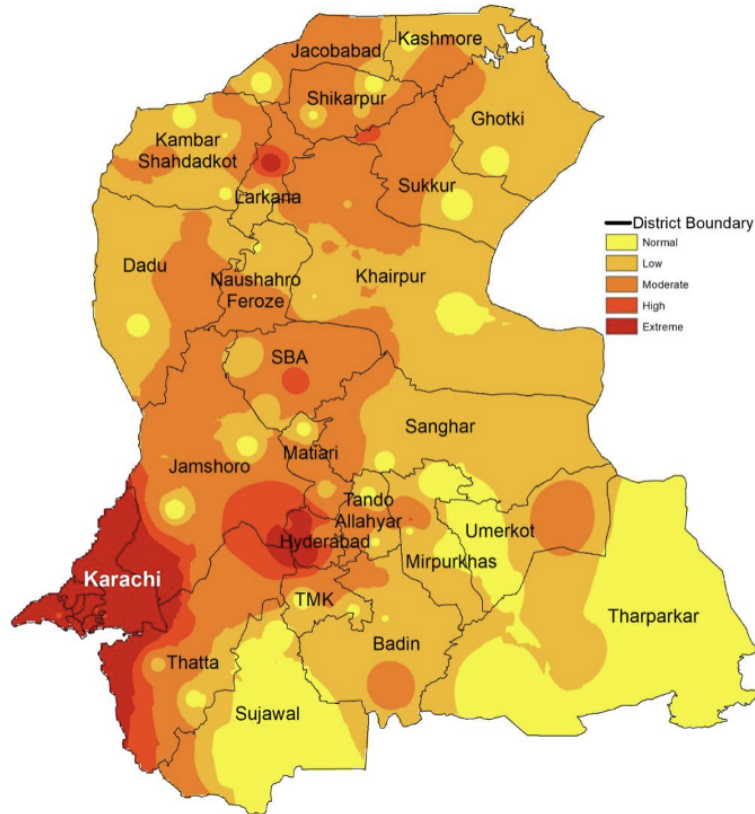


Figure 1: Pakistan Heatwave Risk Analysis (2025). Source: SOPs Heatwave Management, 2025. National Disaster Management Authority (NDMA). Available at: <https://www.ndma.gov.pk/storage/guidelines/March2025/tlhztI9tvzQwkrSjFnj.pdf>

At the same time, glacial melt coming from the northern Himalayas has intensified the risk of flash floods in Pakistan, as was seen during the tragic 2022 floods, which submerged the densely populated area on the right bank of the Indus River Basin and displaced 33 million people.⁹⁰ In the absence of more effective mitigation and adaptation efforts, Pakistan's annual average temperature is projected to rise up to 5°C by the end of the century, even under a moderate global emissions scenario.⁹¹

⁹⁰ Nanditha, J. S., Kushwaha, A. P., Singh, R., Malik, I., Solanki, H., Chuphal, D. S., et al. (2023). The Pakistan flood of August 2022: Causes and implications. *Earth's Future*, 11, e2022EF003230. <https://doi.org/10.1029/2022EF003230>; World Weather Attribution. (2022). *Pakistan floods 2022: Climate change likely increased heavy rainfall*. <https://www.worldweatherattribution.org/wp-content/uploads/Pakistan-floods-scientific-report.pdf>

⁹¹ Asian Development Bank. (2017). *Climate change profile of Pakistan* (Publication Stock No. TCS 178761). Available via: <https://www.adb.org/sites/default/files/publication/357876/climate-change-profile-pakistan.pdf>

Karachi, the capital city of Sindh province, in particular, faces acute heat-related risks, made worse by its high population density and the intensifying urban heat island effect, a phenomenon in which areas with high population density and limited green space absorb heat and become “islands” of higher temperature relative to the surrounding area. And high nighttime temperatures have become particularly problematic across the city, with sundown often providing little relief from the daytime extremes. Since 1960, Karachi’s mean nighttime temperatures have risen by an estimated 2.4°C (4.3°F).⁹² This upward temperature trend in Pakistan is projected to continue as global temperatures increase.⁹³

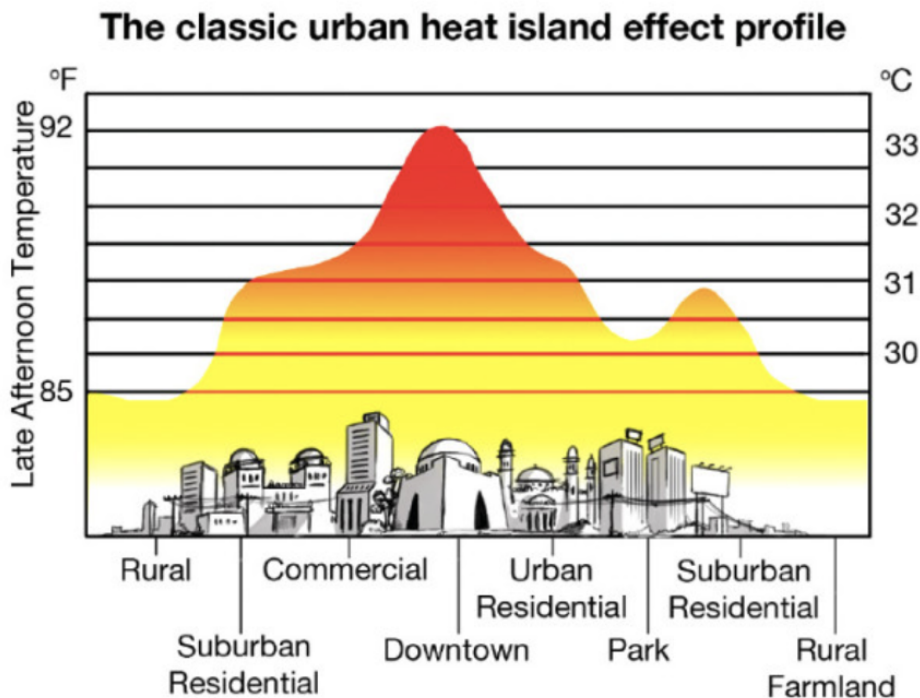


Figure 2: Urban Heat Island Effect in Karachi. SOURCE: The Express Tribune. FARHAN ANWAR / DESIGN: JAMAL KHURSHID.

Karachi has experienced a slew of deadly heatwaves in recent years. In 2015, over 1,300 people died as temperatures at one point reached 44.8°C (113°F), and the heat index climbed to around 66°C (150°F).⁹⁴ In 2022, the city was hit by the broader India-Pakistan heatwave, a prolonged period of extreme heat that began unusually

⁹² Spear, M. (2018). *Resilient cities: Karachi* (University of Edinburgh). University of Edinburgh Research Archive. Available via <https://era.ed.ac.uk/bitstream/handle/1842/38928/UNI-ED%20Resilient%20cities%20KARACHI.pdf?sequence=1&isAllowed=y>; Rehman, Z. ur. (2025, July 12). *Pakistan swelters under deadly heat and disrupted monsoons*. *The New York Times*. Available via <https://www.nytimes.com/2025/07/12/world/asia/pakistan-heat.html>

⁹³ Koons, E. (2024, June 26). *Heat wave in Pakistan 2024: A scorching reality*. Energy Tracker Asia. <https://energytracker.asia/heat-wave-in-pakistan>

⁹⁴ Safi, M. (2018, May 22). *Death toll climbs in Karachi heatwave*. *The Guardian*. Available via <https://www.theguardian.com/world/2018/may/22/death-toll-climbs-in-karachi-heatwave>; Masood I, Majid Z, Sohail S, Zia A, Raza S. The Deadly Heat Wave of Pakistan, June 2015. *Int J Occup Environ Med*. 2015 Oct;6(4):247-8. doi: 10.15171/ijoem.2015.672. PMID: 26498053; PMCID: PMC6977047.

early in March and continued through May.⁹⁵ Scientific authorities concluded that the weather event, which caused temperatures in some parts of the country to rise above 50°C (122°F), was made up to 30 times “more deadly” as a result of climate change.⁹⁶ More recently, in 2024, Karachi faced another deadly heatwave that overwhelmed the city’s emergency rooms. During this time, some nighttime temperatures remained above 32.5°C (90.5°F), adding continued heat pressure in the evenings, when human bodies usually recover from daytime exposures.⁹⁷ Long power cuts across the city compounded the problem.⁹⁸ The Edhi Foundation, a charity that runs Pakistan’s largest ambulance service, reported receiving upwards of 568 bodies in the city over just five days in June of that year, compared to the usual rate of about 40 per day.⁹⁹

Yet, as highlighted in a [recent report by Amnesty International](#), the government continues to underreport the death toll of extreme heat, leaving the true scale of the crisis unknown, creating an obstacle to effective response.¹⁰⁰

Heat Risk in Pakistan’s Garment Industry

In Pakistan, the textile and garment manufacturing industry plays a central role in export earnings, employment, and industrial growth.¹⁰¹ According to some researchers, the “textile industry is the single largest determinant of the economic growth of [Pakistan] due to its share in the economy as well as its contribution to exports, employment, foreign exchange earnings, investment, and revenue

⁹⁵ Magnusson, L; Emerton R; Simmons A. (2022). “Spring heatwave in India and Pakistan,” No 172, Summer 2022. European Centre for Medium-Range Weather Forecasts (ECMWF), July 2022. Available via: <https://www.ecmwf.int/en/newsletter/172/news/spring-heatwave-india-and-pakistan>; World Weather Attribution. Climate Change made devastating early heat in India and Pakistan 30 times more likely. May 23, 2022.

⁹⁶ World Weather Attribution. Climate Change made devastating early heat in India and Pakistan 30 times more likely. May 23, 2022.

⁹⁷ Azhar, A. (2025, June 16). *Two Suns, One City: Karachi’s Dueling Realities in a Warming World*. Inside Climate News. Available via <https://insideclimatenews.org/news/16062025/karachi-pakistan-extreme-heat-crisis/>; Blackshaw C, Lin N, Begmohammadi A, Bou-Zeid E, Investigating the interaction of tropical cyclone-heatwave compound hazards in urban environments, *Urban Climate*, 10.1016/j.uclim.2025.102667, 64, (102667), (2025).

⁹⁸ Azhar, A. (2025, June 16). *Two Suns, One City: Karachi’s Dueling Realities in a Warming World*. Inside Climate News. Available via <https://insideclimatenews.org/news/16062025/karachi-pakistan-extreme-heat-crisis/>

⁹⁹ Saeed, F. (2025, June 17). *Pakistan is boiling: But the numbers aren’t telling the actual story*. Climate Analytics. Available via <https://climateanalytics.org/comment/pakistan-in-boiling>

¹⁰⁰ Amnesty International. (2025, May 6). *Pakistan: Climate disasters increasing risks of death and disease amongst children and older people – new report*. Available via <https://www.amnesty.org/en/latest/news/2025/05/pakistan-climate-disasters-increasing-risks-of-death-and-disease-amongst-children-and-older-people-new-report/>; Saeed, F. (2025, June 17). *Pakistan is boiling: But the numbers aren’t telling the actual story*. Climate Analytics. Available via <https://climateanalytics.org/comment/pakistan-in-boiling>

¹⁰¹ Pakistan Textile Council. “Pakistan’s Textile Exports.” *PTC*, 2 June 2023, ptc.org.pk/pakistans-textile-exports/. Accessed 16 November 2025.

generation.”¹⁰² The sector employs roughly 40% of Pakistan’s industrial labor force and is responsible for 8% of gross domestic product (GDP).¹⁰³

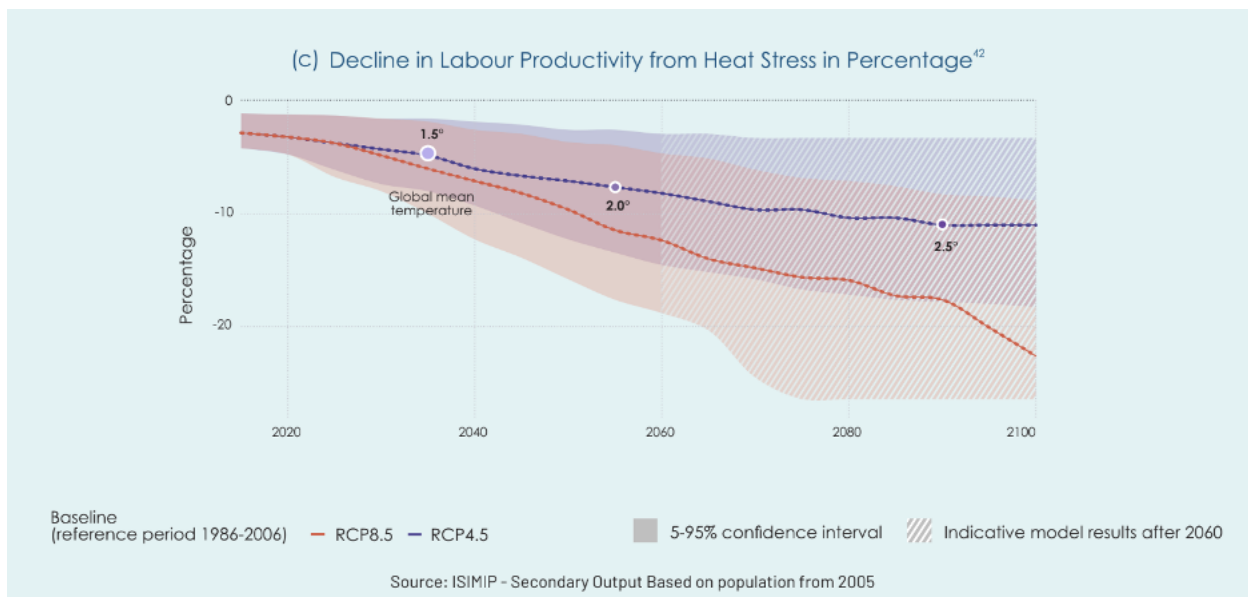


Figure 3: Decline in Labour Productivity from Heat Stress [Percentage]. Source: Pakistan: National Adaptation Plan 2023. Ministry of Climate Change & Environmental Coordination (MoCC&EC), Government of Pakistan. Available via: <https://mocc.gov.pk/PublicationDetail/ZDg5NjgwMjMtMWVwZC00ODMyLTg1NzctNmQzODFhNTVmMWEz>

Research has repeatedly shown that indoor workers who work in hot climates without effective cooling systems are at high risk of heat-related injury and illness, as high indoor temperatures can negatively affect human health.¹⁰⁴ Among indoor workers, manufacturing workers (including garment and textile workers) in particular, are known to be at increased risk of heat-related impacts.¹⁰⁵ Several studies of industrial workplaces in Pakistan and across the South Asia region have already confirmed high indoor temperatures and limited adaptive measures, finding

¹⁰² Seher Kanat. (2018). *SWOT analysis of Pakistan’s textile and clothing industry*. Revista Industria Textila. Available via https://www.revistaindustriatextila.ro/images/2018/06/013_SEHER%20KANAT_Industria%20Textila_no_6_2018.pdf

¹⁰³ Seher Kanat. (2018). *SWOT analysis of Pakistan’s textile and clothing industry*. Revista Industria Textila. Available via https://www.revistaindustriatextila.ro/images/2018/06/013_SEHER%20KANAT_Industria%20Textila_no_6_2018.pdf

¹⁰⁴ Tham, S., et al. “Indoor Temperature and Health: A Global Systematic Review.” *Public Health*, vol. 179, Feb. 2020, pp. 9–17. Elsevier, <https://doi.org/10.1016/j.puhe.2019.09.005>.

¹⁰⁵ De Sario M, de’Donato FK, Bonafede M, Marinaccio A, Levi M, Ariani F, Morabito M and Michelozzi P (2023) Occupational heat stress, heat-related effects and the related social and economic loss: a scoping literature review. *Front. Public Health* 11:1173553.

doi: 10.3389/fpubh.2023.1173553; Xiang J, Bi P, Pisaniello D, Hansen A. Health impacts of workplace heat exposure: an epidemiological review. *Ind Health*. 2014;52(2):91-101. doi: 10.2486/indhealth.2012-0145. Epub 2013 Dec 21. PMID: 24366537; PMCID: PMC4202759.

elevated levels of heat stress among manufacturing workers.¹⁰⁶ A more recent global report by the Cornell Global Labor Institute identified Pakistan among the major apparel manufacturing hubs increasingly exposed to dangerous temperature thresholds, documenting the rising frequency of days above 35°C (95°F).¹⁰⁷

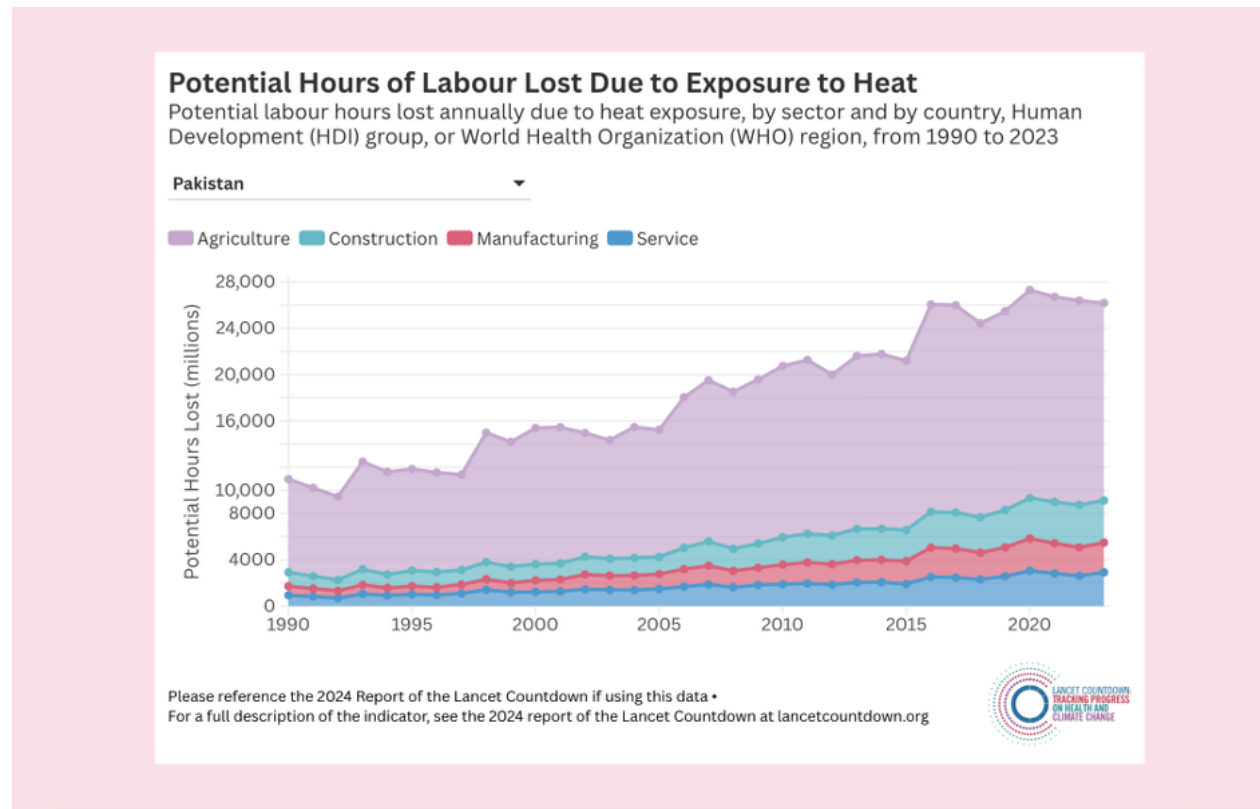


Figure 4

Moreover, the [lack of union representation, low bargaining power](#), and weak enforcement of labor protections in Pakistan’s textile industry together create a situation in which workers have little agency to demand heat adaptation protocols or refuse unsafe work. This is an unfortunate pattern seen across South Asia, and

¹⁰⁶ Butt, Muhammad Salman & Kuklane, Kalev & Saleem, Javeria & Zakar, Rubeena & Bukhari, Gul & Ishaq, Muhammad. (2022). Evaluation of Occupational Exposure to Heat Stress and Working Practices in the Small and Mid-Sized Manufacturing Industries of Lahore, Pakistan. *Avicenna*. 2022. 10.5339/avi.2022.5.; Batool, S; Abbas M; Asam Z; Farid M. (2024). Association of Occupational Health Impairment and Heat Stress among Manufacturing Industry Workers of Sialkot, Pakistan; Parsons, L., Mishra, P., Cole, J., Lawreniuk, S., & Long, L. V. (2025). Climate-linked heat inequality in the global southern workforce: Cambodian workers’ economic and health vulnerability to high core temperatures in five occupational sectors. *Climate and Development*, 17(10), 869–881. <https://doi.org/10.1080/17565529.2025.2474026>; Yeasmin F, Bach AJE, Palutikof JP, Tonmoy F, Tofail F, Rahman M, Rutherford S. Heat impacts on health and productivity: the case of two ready-made garment factories in tropical Bangladesh. *Environ Occup Health Pract*. 2025 Apr 1;7(1):2024-0009. doi: 10.1539/eohp.2024-0009. PMID: 40568029; PMCID: PMC12188113.

¹⁰⁷ Judd, Jason, Angus Bauer, Sarosh Kuruvilla, and Stephanie Williams. *Fashion’s Climate Breakdown and Its Effect for Workers: Report 1*. Global Labor Institute, Cornell University, 19 Sept. 2024. https://www.ilr.cornell.edu/sites/default/files-d8/2024-09/GLI%20Report%201_Rev_9-19-24.pdf. Accessed 29 June 2025.

demonstrated in Climate Rights International's [2024 investigation of heat impacts](#) on workers in Dhaka, Bangladesh.¹⁰⁸

¹⁰⁸ "My Body Is Burning": Climate Change, Extreme Heat, and Labor Rights in Bangladesh. Climate Rights International. July 21, 2025.

III. The Impacts of Extreme Heat on Garment Factory and Textile Mill Workers in Karachi

Through the 2025 hot season, Pakistan again experienced record-breaking temperatures, with mercury readings reaching between 46 and 48°C (118.4°F) in some parts of Sindh province, in which Karachi is located.¹⁰⁹ Though the region's hot season has historically been thought of as between May and July, climate change is bringing with it early onset heatwaves, with hotter-than-average temperatures now pushing "well into December."¹¹⁰ All of the workers interviewed for this report described heat as a major challenge.

Heat Impacts on Worker Health and Well-Being

All of the workers with whom Climate Rights International spoke reported that workplace heat exposure took a significant toll on their health, citing symptoms including excess sweating, headaches, dizziness, nausea, blurred vision, muscle cramps and tremors, increased heart rate, and difficulty breathing. Muhammad Hunain, a mill worker, explained:

When the weather becomes extremely hot, which is now most of the year, it feels like my body is melting. The air inside the factory turns thick and suffocating. The heat gets trapped inside the building; it does not escape. Some days, breathing becomes difficult because there is no circulation of air.¹¹¹

He described how, when he gets very hot, he starts "sweating uncontrollably," adding:

My head begins pounding. Sometimes my vision becomes blurry. I have felt dizzy many times. There have been moments when I felt like I might faint."¹¹²

Muhammad Sagheer, a garment worker in a finishing department, shared a similar experience:

¹⁰⁹ ACT Alliance. (2025, May 5). *ACT Alert: Pakistan Heatwave Emergency 2025*. Available via <https://actalliance.org/alerts/pakistan-heatwave-emergency-2025/>

¹¹⁰ Aman Azhar, "Two Suns, One City: Karachi's Dueling Realities in a Warming World," *Inside Climate News*, June 16, 2025.; World Weather Attribution. (2022). *Pakistan floods 2022: Climate change likely increased heavy rainfall*. <https://www.worldweatherattribution.org/wp-content/uploads/Pakistan-floods-scientific-report.pdf>

¹¹¹ CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025.

¹¹² CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025.

The cloth, the machines, the steam, everything traps heat. Sometimes it feels like there's no air to breathe.¹¹³

He reported common symptoms of heat stress:

I get headaches, dizziness, and my eyes burn. But we cannot stop working.¹¹⁴

Munawar Siddiqui, a mill worker, described the indoor work environment as “oppressive,” particularly during Karachi’s prolonged summers:

The combination of steam, chemicals, and machines makes it unbearable. During the heatwave, it felt like the air was burning. Sweat runs constantly, my head gets heavy, and sometimes I feel dizzy.¹¹⁵

Another worker said:

Sometimes I feel my heartbeat getting faster because of the heat. Sometimes my vision blurs because of the heat, and I feel like I might faint.¹¹⁶

In Karachi, the heat comes early in the morning and regularly lasts well into the evenings. Samina, a woman worker in a local garment factory, shared:

Even in the mornings, the air feels heavy.¹¹⁷

For some workers, the high ambient temperatures were made worse by added heat from workplace machinery. Workers noted that these challenges were particularly pronounced among ironing and pressing staff. Sardar Khan, a helper in the cutting department at a textile mill, explained that his duties place him “directly in areas where heat accumulates rapidly due to heavy equipment and poor ventilation.”¹¹⁸ When ironing, he explained: “The steam burns your face. In summer, it’s torture.”¹¹⁹ Khan reported symptoms including dizziness, rapid heartbeat, headaches, blurred vision, dehydration, muscle cramps, and hand tremors on the job. He shared that his symptoms typically worsen in the late afternoon, when temperatures peak inside the building.

Fainting

¹¹³ CRI interview with Muhammad Sagheer, Karachi, Pakistan, 27 October 2025.

¹¹⁴ CRI interview with Muhammad Sagheer, Karachi, Pakistan, 27 October 2025.

¹¹⁵ CRI interview with Munawar Siddiqui, Karachi, Pakistan, 25 October 2025.

¹¹⁶ CRI Interview with Sardar Khan, Karachi, Pakistan, 25 October 2025.

¹¹⁷ CRI interview with Samina, Karachi, Pakistan, 28 October 2025.

¹¹⁸ CRI interview with Sardar Khan, Karachi, Pakistan, 25 October 2025.

¹¹⁹ CRI interview with Sardar Khan, Karachi, Pakistan, 25 October 2025.

Many of the laborers interviewed by Climate Rights International described temperatures so extreme that workers often fainted on the job. Munawar, a garment worker, shared his experience:

Our job is standing work. By the end of the day, our legs swell, and we feel extreme exhaustion. In summer, many men and women faint.¹²⁰

Munawar mentioned fainting incidents multiple times during his interview, later noting that:

People faint often, especially in summer. The [heat] hits the body very hard.¹²¹

Gulzar Ali, a mill worker, recounted his own similar experience during the summer 2025 heatwaves in Karachi:

During this recent heatwave, I saw several people faint right in front of me. One worker collapsed with blood coming from his nose.¹²²

Heat syncope, a serious condition caused by the body's inability to regulate blood pressure in extreme temperatures, can lead to fainting due to a drop in blood flow to the brain.¹²³ Extreme temperatures can also increase the risk of nose bleeds, as nasal blood vessels dilate in the heat; in combination with strenuous physical activity, this can cause the nose to bleed.¹²⁴

Sardar Khan reported fainting himself as recently as May 2025, recalling the experience, he said:

I fainted a couple of times. It also happened to other people.¹²⁵

Occupational Injury

In addition to the direct physical impacts of heat exposure, high workplace temperatures can also increase the risk of accidents and injury on the job.¹²⁶ Samina, a sewing machine operator at a garment factory, told Climate Rights International that the heat sometimes affects her grip:

¹²⁰ CRI interview with Munawar Siddiqui, Karachi, Pakistan, 25 October 2025.

¹²¹ CRI interview with Munawar Siddiqui, Karachi, Pakistan, 25 October 2025.

¹²² CRI interview with Gulzar Ali, Karachi, Pakistan, 26 October 2025.

¹²³ Heat Syncope. *ScienceDirect Topics: Medicine & Dentistry*. Accessed 14 November 2025 via <https://www.sciencedirect.com/topics/medicine-and-dentistry/heat-syncope>

¹²⁴ Kailash Healthcare. 2024. Why does the nose bleed more in summer months? Accessed 14 November 2025 via <https://www.kailashhealthcare.com/blog/nose-bleeding-during-summer>

¹²⁵ CRI interview with Sardar Khan, Karachi, Pakistan, 25 October 2025.

¹²⁶ Flouris, A., Azzi, M., Graczyk, H., Nafradi, B., and Scott, N., eds. 2024. Heat at Work: Implications for Safety and Health. A Global Review of the Science, Policy and Practice. ILO.

Sometimes my fingers slip on the fabric because they're sweaty.¹²⁷

Abdullah, another garment worker, explained how heat-related dizziness can lead to harm:

Sometimes workers cut their hands or make errors on machines because they are dizzy.¹²⁸

Heat Impacts on Mental Health

In addition to the physical toll of the heat, high workplace temperatures often leave workers feeling mentally and emotionally distressed. Both garment and mill workers described feeling fatigued, irritable, angry, distracted, and anxious while working through the hot season.¹²⁹

Amir Zareef described how the persistent heat significantly impacts his emotional well-being, sharing:

The heat makes me angry and tired. I can't focus. It also kills motivation.¹³⁰

Other workers noted stark differences in their mental health depending on the temperature. Shaista, a garment worker in a packing department, shared:

In cooler months, I feel normal. But in the heat, I feel stressed, irritated, and worried that I might faint.¹³¹

Muhammad Hunain felt similarly, telling Climate Rights International:

In the two months of winter in Karachi, I feel calmer and can focus. But during the hot months, I feel stressed, frustrated, and trapped. Sometimes anger builds up because we know that nothing is going to change.¹³²

Heat-Related Productivity Impacts

¹²⁷ CRI interview with Samina, Karachi, Pakistan, 28 October 2025.

¹²⁸ CRI interview with Sardar Khan, Karachi, Pakistan, 25 October 2025.

¹²⁹ CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025; CRI interview with Amir Zareef, Karachi, Pakistan, 28 October 2025; CRI interview with Shaista, Karachi, Pakistan, 26 October 2025; CRI interview with Sardar Khan, Karachi, Pakistan, 25 October 2025.

¹³⁰ CRI interview with Amir Zareef, Karachi, Pakistan, 28 October 2025.

¹³¹ CRI interview with Shaista, Karachi, Pakistan, 26 October 2025.

¹³² CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025.

Public health and economic researchers have repeatedly linked occupational heat exposure to reduced productivity on the job, measured in lost working hours.¹³³ Nearly all of the workers interviewed for this report described the ways in which high workplace temperatures limited their productivity. Shaista, for example, described the direct impact on her performance:

When I'm very hot, I slow down. It becomes harder to focus. Mistakes happen.¹³⁴

During heatwaves, she said, tasks “feel twice as exhausting.”

Abdullah, a helper at a garment factory, described similar experiences:

In May, June, July, and even August, everyone slows down. You feel weak, you sweat nonstop, and your hands literally shake.¹³⁵

Some workers explained that their individual-level heat-related productivity losses were compounded by the impacts heat had on their colleagues. For example, Samina, a woman garment worker, noted that when one worker becomes unwell due to the heat, “it slows down the entire line.”¹³⁶

Heat-Related Financial Impacts

Workers told Climate Rights International that rising temperatures imposed severe financial pressures, compounding the hardships faced by already poor laborers. Several described how collapsing or falling ill in extreme heat resulted in immediate wage losses, even though paid sick leave is required by law.¹³⁷ Sardar Khan, for example, who recalled fainting in the heat as recently as May 2025, told CRI:

I fainted a couple of times. It also happened to other people. I asked the contractor for leave and stayed home for two days. It was unpaid leave.¹³⁸

For workers earning minimum wage or less, even a single missed day of income could destabilize their budget, creating serious financial stress. Samina explained:

¹³³ Flouris, A., Azzi, M., Graczyk, H., Nafradi, B., and Scott, N., eds. 2024. Heat at Work: Implications for Safety and Health. A Global Review of the Science, Policy and Practice. ILO; Alahmad, B., Lung, SC.C., Makar, A. *et al.* Heat stress and productivity losses in urban construction workforces. *Nat Cities* 2, 703–707 (2025). <https://doi.org/10.1038/s44284-025-00283-1>

¹³⁴ CRI interview with Shaista, Karachi, Pakistan, 26 October 2025.

¹³⁵ CRI interview with Abdullah, Karachi, Pakistan, 27 October 2025.

¹³⁶ CRI interview with Samina, Karachi, Pakistan, 28 October 2025.

¹³⁷ Sindh Factories Act, 2015 (XIII of 2016), Section 79(2) (Pakistan). (“Every worker shall be entitled to sixteen days in a year sick leave on full pay.”)

¹³⁸ CRI interview with Sardar Khan, Karachi, Pakistan, 25 October 2025.

If I miss even one day, the deduction affects my whole month's budgeting.¹³⁹

Other workers reported that contractors sometimes cut wages if they were seen taking unscheduled breaks, even when visibly struggling in unsafe conditions. As a result, many felt compelled to continue working through dizziness, exhaustion, and other heat-related symptoms. Muhammad Hunain described this pressure:

When I get very hot, I start sweating uncontrollably. My head begins pounding. Sometimes my vision becomes blurry. I have felt dizzy many times... There have been moments when I felt like I might faint, but stopping work is not an option. If I sit down or slow down too much, the supervisors scold us, and the contractor can cut our wages.¹⁴⁰

Amir Zareef, too, similarly described how the heat sometimes led to losing the day's earnings – again, despite the provisions outlined for paid sick leave in the Sindh Factories Act:¹⁴¹

If we become unwell and need rest, we lose our day's wage.¹⁴²

Challenges for Women Workers

As temperatures continue to rise, already difficult working conditions in Karachi are becoming even more dangerous, especially for women. In many developing countries, including Pakistan, women often take on physically demanding jobs that push them to their limits, and extreme heat only increases these risks. The challenges women face in these settings are often compounded by the high burden of unpaid domestic labor women tend to undertake, which also becomes more intense as temperatures rise.¹⁴³ The women we interviewed described spending their limited time off to prepare food and care for children, leaving them with even less time to rest and recover from the impacts of workplace heat. Shaista, for example, explained:

After cooking for my family and preparing my lunch, I come to the factory and work for nearly nine hours in intense heat. Then I return home to find there is no electricity. This constant cycle is taking a serious toll on my health.¹⁴⁴

¹³⁹ CRI interview with Samina, Karachi, Pakistan, 28 October 2025.

¹⁴⁰ CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025.

¹⁴¹ Sindh Factories Act, 2015 (XIII of 2016), § 79(2) (Pak.). ("Every worker shall be entitled to sixteen days in a year sick leave on full pay.")

¹⁴² CRI interview with Amir Zareef, Karachi, Pakistan, 28 October 2025.

¹⁴³ "The Scorching Divide: How Extreme Heat Inflames Gender Inequalities in Health and Income." *Adrienne Arsht-Rockefeller Foundation Resilience Center*, 26 July 2023, <https://onebillionresilient.org/extreme-heat-inflames-gender-inequalities/>.

¹⁴⁴ CRI interview with Shaista, Karachi, Pakistan, 26 October 2025.

For some women, these pressures intersect with structural discrimination in the workplace, compounding the risks of working in dangerously hot conditions. Women constitute a significant portion of the workforce in stitching, labeling, and finishing sections, all roles that require continuous, rapid labor under strict production targets, according to one of the male workers, Gulzar Ali.¹⁴⁵ Ali stressed that heat-related risks disproportionately affect these women, in part because:

There is no system for female workers to file complaints, even about harassment. They are just told to stay quiet.¹⁴⁶

Samina, another woman worker, shared that, though lifts are available in her factory, workers, and in particular women – even when unwell – are not permitted to use them:

Women with health conditions are forced to climb multiple flights of stairs in extreme heat. I know a diabetic worker who struggles daily due to this restriction.¹⁴⁷

The distinct struggles experienced by women on the factory floor are, according to Mir Zulfiqar Ali, a local labor activist and the Executive Director of the Workers Education and Research Organization (WERO), unfortunate and widespread:

Women on the assembly line are expected to maintain the same speed even when the temperature becomes unbearable. They do not have the freedom to take breaks, and they are often scolded for slowing down.

Heat Impacts Outside of Work

Compounding the issue of workplace heat exposure is the fact that many workers are unable to cool down adequately at home. Several workers described power cuts and limited access to residential cooling mechanisms.¹⁴⁸ Munawar Siddiqi, for example, described the frequent half-day load-shedding in his neighborhood – a practice in which the electricity supply is intentionally powered off in certain areas in an effort to limit electricity consumption and prevent grid strain or shutdown. He told Climate Rights International that:

I reach home exhausted. I cannot sleep because there is no light and no fans. I can't focus on my family. The heat takes all my energy.¹⁴⁹

¹⁴⁵ CRI interview with Gulzar Ali, Karachi, Pakistan, 26 October 2025.

¹⁴⁶ CRI interview with Gulzar Ali, Karachi, Pakistan, 26 October 2025.

¹⁴⁷ CRI interview with Samina, Karachi, Pakistan, 28 October 2025.

¹⁴⁸ CRI interview with Munawar Siddiqi, Karachi, Pakistan, 25 October 2025; CRI interview with Shaista, Karachi, Pakistan, 26 October 2025.

¹⁴⁹ CRI interview with Munawar Siddiqi, Karachi, Pakistan, 25 October 2025.

Research consistently shows that the effects of extreme heat, including in Pakistan, are considerably more harmful, and deadly, in the absence of access to electricity.¹⁵⁰

¹⁵⁰ Arda Rasool, Hafsa Ajmal, Mohammed Hammad Jaber Amin, Abdulqadir J. Nashwan, Health-related hazards of heatwaves in Pakistan, *Journal of Medicine, Surgery, and Public Health*, Volume 3, 2024, 100125, ISSN 2949-916X, <https://doi.org/10.1016/j.glmedi.2024.100125>.

IV. Labor Rights Violations as Barriers to Adaptation

Climate Rights International's investigation found that the adverse effects of workplace heat exposure were often made worse by frequent labor rights violations, many of which prevent workers from engaging in protective behaviors to reduce the impacts of the heat. Specific abuses documented by Climate Rights International include low wages and failure to comply with compensation laws; forced and unpaid overtime; lack of breaks and fear of retaliation; workplace harassment and humiliation; inadequate access to safe drinking water and hydration; lack of access to sanitation and restrictions on bathroom usage; lack of heat-specific safety training; limited access to medical care and lack of medical leave; and barriers to unionization. These abuses often left workers with limited options to adapt to or protect themselves from hot workplace conditions, and ultimately exacerbated the health and safety risks of the heat.

Low Wages and Failure to Comply with Compensation Laws

The government of Sindh province recently increased the minimum wage for unskilled workers, including garment workers, to 40,000 PKR (\$142 as of November 2025) per month.¹⁵¹ Yet nearly all of the workers interviewed explained that this was not enough to cover their expenses, and mill workers often reported earning less than the minimum.¹⁵² Abdullah, one of the garment workers, explained:

The government only fixed the minimum wage, but inside the factories, no one checks how workers live, and that 'minimum' pay just doesn't buy enough food with prices going up every day.¹⁵³

Others shared that as much as 20% of their monthly wages were spent on transportation to and from work. One worker shared:

After paying bills and groceries, [this salary] becomes very difficult to manage.¹⁵⁴

Still others described issues surrounding enforcement, explaining that though the minimum wage was designed around an eight-hour workday, they often work for much longer with no additional pay:

¹⁵¹ Sindh Employees Social Security Institution. (2025). *Unskilled minimum wage 2025-26* (PDF). <https://www.sessi.gov.pk/Unskilled%20Minimum%20Wage%2025-26.pdf>

¹⁵² CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025; CRI interview with Sardar Khan, Karachi, Pakistan, 25 October 2025.

¹⁵³ CRI interview with Abdullah, Karachi, Pakistan, 27 October 2025.

¹⁵⁴ CRI interview with Muhammad Sagheer, Karachi, Pakistan, 27 October 2025.

The government increased the minimum wage to 40,000 PKR for an eight-hour workday, but in our factory, we are being forced to work for twelve hours on this same salary instead of eight hours.¹⁵⁵

Workers described how the heat added an additional dimension of financial pressure, noting that though their salaries were set, the factory payment structures still functioned on a daily-wage basis, meaning that injury or illness – including symptoms caused by the heat – would result in lost pay, despite the requirement of up to sixteen days of paid sick leave each year in the Sindh Factory Law.¹⁵⁶ Samina, for example, shared that her salary often fluctuates below the minimum designated by law, as any time off – even for emergencies – results in an automatic deduction.¹⁵⁷ Munawar Siddiqui similarly described the failure to give paid sick leave, noting that, “Absence due to illness results in unpaid days.”¹⁵⁸

Workers expressed fear of these deductions, explaining that they effectively force workers to choose between their health and their livelihoods. Amir Zareef, a garment worker suffering from high blood pressure, described this tension:

This past summer was the worst. I often felt dizzy and weak. But if I say I'm unwell, [my supervisor] will tell me to go home, and that means losing a day's wage. I can't afford that.¹⁵⁹

A total of seven family members depend on Zareef's income for survival.

Shaista, too, described this reality:

I've felt dizzy many times during the hot days. But we don't stop working, because stopping means losing wages.¹⁶⁰

Mill workers described similar pressures. Muhammad Hunain, for example, said:

Sometimes I worry I might faint, but I keep working because stopping means losing wages.¹⁶¹

Forced Overtime, Lack of Breaks, and Fear of Retaliation

¹⁵⁵ CRI interview with Muhammad Sagheer, Karachi, Pakistan, 27 October 2025.

¹⁵⁶ Sindh Factories Act, 2015 (XIII of 2016), § 79(2) (Pak.). (“Every worker shall be entitled to sixteen days in a year sick leave on full pay.”)

¹⁵⁷ CRI interview with Samina, Karachi, Pakistan, 28 October 2025.

¹⁵⁸ CRI interview with Munawar Siddiqui, Karachi, Pakistan, 25 October 2025.

¹⁵⁹ CRI interview with Amir Zareef, Karachi, Pakistan, 28 October 2025.

¹⁶⁰ CRI interview with Shaista, Karachi, Pakistan, 26 October 2025.

¹⁶¹ CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025.

Most of the workers interviewed reported working six to seven days per week, with as little as two days off per month.¹⁶² And workers consistently described overtime as a requirement, not a choice. Some cited pressure from supervisors, while others expressed fear of retaliation if they were to refuse. Samina explained:

They, [supervisors], don't say it directly, but we know that refusing overtime can cost us our position in the line.¹⁶³

Muhammad Sagheer expressed a similar impression:

Only one day off is allowed in the entire month. In addition to this, there is no day off during the week. There are twenty-nine working days per month. Overtime has to be worked on four Sundays in the month. More often than not, it is mandatory to come for overtime on Sunday. Failure to attend will result in termination of employment.¹⁶⁴

These requirements are in direct violation of Sindh province law, which prohibits factory work of more than 48 hours in a single week, and prohibits work on Sundays, with only a few exceptions that do not appear to be met in this context.¹⁶⁵

Some said their additional hours were not always accurately recorded or paid. Hunain, for example, begins his daily shift at 8:30 AM each morning, despite not being paid until 9:00 AM:

We are told to enter the factory early so we can prepare our stations. I work in folding and packaging. My job is to check stitching, fold the sheets, box them, and place labels for export orders. The work ... requires standing for long periods. The day usually continues until 6:00 p.m., but if there is an urgent order or if the supervisors insist, we work even later for overtime, though even overtime is sometimes not properly recorded.¹⁶⁶

¹⁶² CRI interview with Munawar Siddiqui, Karachi, Pakistan, 25 October 2025; CRI interview with Amir Zareef, Karachi, Pakistan, 28 October 2025.

¹⁶³ CRI interview with Samina, Karachi, Pakistan, 28 October 2025.

¹⁶⁴ CRI interview with Muhammad Sagheer, Karachi, Pakistan, 27 October 2025.

¹⁶⁵ Sindh Factories Act, 2015, Section 55 ("Weekly Holiday / Sunday Work"). "(1) No adult worker shall be allowed or required to work in a factory on a Sunday unless – (a) he had or will have a holiday for a whole day on one of the three days immediately before or after that Sunday; and (b) the manager of the factory has, before that Sunday or the substituted day, whichever is earlier – (i) delivered a notice to the office of the Inspector of his intention to require the worker to work on the Sunday and of the day which is to be substituted; and] (ii) displayed a notice to that effect in the factory..." Available at: *Sindh Factories Act, 2015 (Sindh)*, English text, CLR Labour Laws Database, <https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Factories%20Act%202015.pdf>; Section 54, "No adult worker shall be allowed or required to work in a factory for more than forty-eight hours in any week.

¹⁶⁶ CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025.

All of the workers interviewed described breaks as insufficient, many of whom stressed that they were heavily monitored. Even during periods of extreme heat, production targets remained unchanged and supervisors often treated brief pauses as disruptions, rather than necessities. Some, like Samina, described implicit restrictions resulting from intense production targets:

The pressure to complete orders never decreases, even when the heat is unbearable...

The pressure to keep up with production targets discourages workers from taking short rests even when required.¹⁶⁷

Both Abdullah and Muhammad Sagheer spoke emotionally about the daily struggle:

[Management doesn't] change the targets. They say, 'The work must be finished.' But they don't see what heat does to our bodies.¹⁶⁸

My body feels like it is burning. But there is no break. The targets stay the same. They [management] say, 'Heat or no heat, the work must finish.'¹⁶⁹

Abdullah also described explicit limitations on break times:

Only one break is provided during the entire day. We get one hour for lunch and prayers, but in the heat it is not enough. After that, we must work continuously.¹⁷⁰

Sardar, too, described similar limitations:

The factory provides only one formal lunch break. Any additional rest is discouraged, even when temperatures rise to unbearable levels.¹⁷¹

Still others, including Sardar, described heavy monitoring from factory management:

If we stop for even five minutes, the supervisor scolds us.¹⁷²

He added:

¹⁶⁷ CRI interview with Samina, Karachi, Pakistan, 28 October 2025.

¹⁶⁸ CRI interview with Abdullah, Karachi, Pakistan, 27 October 2025.

¹⁶⁹ CRI interview with Muhammad Sagheer, Karachi, Pakistan, 27 October 2025.

¹⁷⁰ CRI interview with Abdullah, Karachi, Pakistan, 27 October 2025.

¹⁷¹ CRI interview with Sardar Khan, Karachi, Pakistan, 25 October 2025.

¹⁷² CRI interview with Sardar Khan, Karachi, Pakistan, 25 October 2025.

No matter how hot it gets, the supervisors keep saying, ‘Work faster.’¹⁷³

Shaista elaborated:

When dizziness or extreme exhaustion happens, we lean on a wall or sit for a minute. But the supervisor calls us back quickly.¹⁷⁴

According to Siddiqui, supervisors routinely dismiss heat-related complaints:

If we complain, they say, ‘Keep working, finish the target.’¹⁷⁵

Others described fear about speaking out about their suffering in the heat. Samina, for example, reported that she experienced headaches, dizziness, and nausea on the job, but that she rarely reports these symptoms to supervisors:

We worry that if we complain too much, the management might consider us unreliable or slow, and it could affect our future shifts.¹⁷⁶

Still, workers described how the limited break time was not enough to protect them from extreme temperatures. As Abdullah explained:

One break in the whole day is not enough in this heat. Our bodies need time to cool down.¹⁷⁷

Harassment and Humiliation

A number of workers described being treated poorly by supervisors or employers, explaining that factory and textile mill authorities would anger easily, verbally harass them, and attempt to control them in unwelcome ways, including by reprimanding workers for using the restroom during work hours.¹⁷⁸ Worker Gulzar Ali explained:

The people in charge of departments are not hired for their expertise in textiles. They are hired because they know how to control workers harshly.¹⁷⁹

Others, like Munawar Siddiqui, described humiliation tactics used by supervisors:

¹⁷³ CRI interview with Sardar Khan, Karachi, Pakistan, 25 October 2025.

¹⁷⁴ CRI interview with Samina, Karachi, Pakistan, 28 October 2025.

¹⁷⁵ CRI interview with Munawar Siddiqui, Karachi, Pakistan, 25 October 2025.

¹⁷⁶ CRI interview with Samina, Karachi, Pakistan, 28 October 2025.

¹⁷⁷ CRI interview with Abdullah, Karachi, Pakistan, 27 October 2025.

¹⁷⁸ CRI interview with Samina, Karachi, Pakistan, 28 October 2025; CRI interview with Gulzar Ali, Karachi, Pakistan, 26 October 2025.

¹⁷⁹ CRI interview with Gulzar Ali, Karachi, Pakistan, 26 October 2025.

If we take a day off or arrive late, they make us wait at the gate. They scold us, use harsh words, and insult us. It's mentally very painful.¹⁸⁰

Workers told Climate Rights International that they would avoid taking breaks, drinking water, or using the bathroom too frequently out of fear or embarrassment. In Siddiqui's words:

We [workers] avoid taking more breaks because supervisors get angry.¹⁸¹

Inadequate Access to Water and Hydration

Multiple workers complained that they were not provided safe drinking water on the job, noting they were "uncertain about quality,"¹⁸² which limited their ability to hydrate adequately in the heat.¹⁸³ Some described a hierarchy in access to basic resources, with one worker noting:

There is mineral water, but not for us. Ordinary workers drink tanker water. At least it is cold, but we deserve clean water too.¹⁸⁴

Another worker, Muhammad Sagheer, described a similar division in water access:

We use water coming through private tankers. It is cold, but we don't know if it is clean. Sometimes the cooling machines break down, and it takes us days to repair them; we then have to drink hot water.¹⁸⁵

Like Sagheer, Gulzar Ali also described being forced to drink hot and unclean water on the job:

We have been drinking hot water this whole time. Sometimes the water is muddy. The contractor keeps saying it will be fixed 'soon,' but nothing happens.¹⁸⁶

He later added more detail, noting that:

¹⁸⁰ CRI interview with Munawar Siddiqui, Karachi, Pakistan, 25 October 2025.

¹⁸¹ CRI interview with Munawar Siddiqui, Karachi, Pakistan, 25 October 2025.

¹⁸² CRI interview with Amir Zareef, Karachi, Pakistan, 28 October 2025.

¹⁸³ CRI interview with Amir Zareef, Karachi, Pakistan, 28 October 2025; CRI interview with Samina, Karachi, Pakistan, 28 October 2025; CRI interview with Munawar Siddiqui, Karachi, Pakistan, 25 October 2025; CRI interview with Gulzar Ali, Karachi, Pakistan, 26 October 2025; CRI interview with Shaista, Karachi, Pakistan, 26 October 2025; CRI interview with Sardar Khan, Karachi, Pakistan, 25 October 2025.

¹⁸⁴ CRI interview with Abdullah, Karachi, Pakistan, 27 October 2025.

¹⁸⁵ CRI interview with Muhammad Sagheer, Karachi, Pakistan, 27 October 2025.

¹⁸⁶ CRI interview with Gulzar Ali, Karachi, Pakistan, 26 October 2025.

During the summer the water is too hot to touch. It comes from metal tanks on the rooftop, so workers can't even use it for ablutions before prayers. We have to wait and wait until the water cools a little.¹⁸⁷

As one worker, Shaista, put it:

We drink it because we have to, not because it helps.¹⁸⁸

Though Sindh law requires that all factories provide workers with a “wholesome supply of drinking water” and, in factories that employ more than 250 workers, that “provision shall be made for effective cooling the drinking water during the hot weather,” it appears these requirements are not being effectively enforced or realized.¹⁸⁹

Even when potable water is made available, workers described limitations regarding their ability to drink more frequently in the heat. Amir shared that frequent visits to the water station are discouraged by management, as “supervisors say it disrupts the work.”¹⁹⁰ Shaista detailed similar restrictions, which sometimes caused workers to avoid drinking water on the job, even in the heat:

Supervisors don't like workers going again and again. So people avoid drinking water.¹⁹¹

Munawar Siddiqi shared his first-hand experiences restricting water on the job, telling Climate Rights International: “you can't drink too much because then you have to go to the bathroom,” noting that frequent toilet breaks were not allowed.¹⁹²

Several workers described long lines at the water stations, which limited their ability to access water due to productivity concerns. Still others said that workers were not allowed to keep water at their individual workstations. Samina explained:

Workers are also prohibited from keeping water bottles near their machines. If anyone spends more than five minutes to drink water or use the washroom, the supervisor reprimands them.¹⁹³

¹⁸⁷ CRI interview with Gulzar Ali, Karachi, Pakistan, 26 October 2025.

¹⁸⁸ CRI interview with Shaista, Karachi, Pakistan, 26 October 2025.

¹⁸⁹ Sindh Factories Act 205, Sections 22 and 23: “In every factory, wherein more than two hundred and fifty workers are ordinarily employed, provision shall be made for effective cooling the drinking water during the hot weather.”

¹⁹⁰ CRI interview with Amir Zareef, Karachi, Pakistan, 28 October 2025.

¹⁹¹ CRI interview with Shaista, Karachi, Pakistan, 26 October 2025.

¹⁹² CRI interview with Munawar Siddiqui, Karachi, Pakistan, 25 October 2025.

¹⁹³ CRI interview with Samina, Karachi, Pakistan, 28 October 2025.

When asked if they were ever given oral rehydration solution (ORS) or electrolytes on the job, most workers said that this practice was uncommon. Others said that workers were forced to purchase these supports themselves, noting that the financial barrier was prohibitive.

Lack of Access to Sanitation and Restrictions on Bathroom Usage

Nearly all of the workers explained that the factory bathrooms they had access to at work were unclean and lacking basic supplies, despite the fact that Sindh province law requires both latrines and urinals to be “maintained in a clean and sanitary condition at all times with suitable detergents or disinfectants or with both.”¹⁹⁴ Five of the workers interviewed shared that the washrooms at work did not have any soap. Shaista, a woman worker, described the unhygienic conditions:

There is water, but no soap. Sometimes the bathrooms are dirty. People don't feel comfortable.¹⁹⁵

Another garment worker, Muhammad Sagheer, experienced similar bathroom conditions at work:

[There is] no soap, no sanitizer. In this heat, proper hygiene is necessary, but no one [in management] thinks about that.¹⁹⁶

“In such heat,” said Sagheer, “at least provide soap so we can wash properly.”¹⁹⁷

Others described overcrowding in factory bathrooms. Samina, a woman garment worker, said:

Sometimes we have to wait in line, and during the hottest days, even standing in the corridor feels suffocating.¹⁹⁸

In addition to concerns about cleanliness and waiting time, many of the workers described informal restrictions on bathroom usage throughout the workday. As one worker put it:

Although there is no written restriction on bathroom use, supervisors discourage frequent visits.¹⁹⁹

¹⁹⁴ Sindh Factories Act, 2015. Section 23 (1)(d).

¹⁹⁵ CRI interview with Shaista, Karachi, Pakistan, 26 October 2025.

¹⁹⁶ CRI interview with Muhammad Sagheer, Karachi, Pakistan, 27 October 2025.

¹⁹⁷ CRI interview with Muhammad Sagheer, Karachi, Pakistan, 27 October 2025.

¹⁹⁸ CRI interview with Samina, Karachi, Pakistan, 28 October 2025.

¹⁹⁹ CRI interview with Amir Zareef, Karachi, Pakistan, 28 October 2025.

Gulzar Ali explained that, in his workplace, workers were reprimanded for taking bathroom breaks outside of the lunch hour:

[Management] give[s] us a one-hour break, but even then, there are strict restrictions on using the washroom. Supervisors scold workers for leaving the line.²⁰⁰

Lack of Heat-Specific Safety Training

None of the workers interviewed reported having received formal training about how to protect themselves from the heat at work, despite the fact that Sindh province law requires that “all exposed workers are instructed on the hazards prevailing in their workplace; (ii) safety measures are taken to avoid injury; and (iii) training is provided at least once in every two years.”²⁰¹ As one worker phrased it: “no one teaches us anything about heat.”²⁰² Another shared:

There is no proper guidance on how to avoid heatstroke or what signs we should watch for.²⁰³

Others described that in the absence of workplace safety guidance on heat, they were left to learn from one another:

We receive no information about heat symptoms or how to manage them. No posters, no instructions, no awareness, nothing. Whatever we know, we learn from each other.²⁰⁴

Limited Access to Medical Care and Lack of Medical Leave

Most of the workers interviewed did not have access to medical care at work, even when they became sick as a result of workplace conditions, like extreme heat. Only two workers said that, in severe cases, employees are sent to SESSI (a government-funded labor hospital), though Samina noted that this is a last resort.²⁰⁵ On the other hand, multiple interviewees described seeing coworkers faint or collapse without receiving meaningful support.

²⁰⁰ CRI interview with Gulzar Ali, Karachi, Pakistan, 26 October 2025.

²⁰¹ Sindh Occupational Health and Safety Rules, 2019, Section G 10(h). “Hazard” is defined in the Sindh Occupational Health and Safety Act, 2017, Section 1(m), as “any activity, arrangements, circumstances, events, occurrences, phenomenon, processes, situations, or substances (whether arising or used within or outside a place of work) that is an actual or potential cause or source of harm.”

²⁰² CRI interview with Munawar Siddiqui, Karachi, Pakistan, 25 October 2025

²⁰³ CRI interview with Samina, Karachi, Pakistan, 28 October 2025.

²⁰⁴ CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025.

²⁰⁵ CRI interview with Amir Zareef, Karachi, Pakistan, 28 October 2025; CRI interview with Samina, Karachi, Pakistan, 28 October 2025.

One worker, Gulzar Ali, recalled the recent heatwave, during which he saw multiple workers consciousness:

During this recent heatwave, I saw several people faint right in front of me. One worker collapsed with blood coming from his nose. The contractor just removed them from the floor and sent them to a government hospital for first aid. After that, they are on their own. The company does not pay for any treatment once they are taken outside.²⁰⁶

Sardar Khan also noted that fainting or illness was often treated casually and without professional support:

There are no nurses or doctors; even if someone faints, they say 'sit for a few minutes near the fan' or 'drink water.'²⁰⁷

Others, like Muhammad Sagheer, similarly highlighted the near-total absence of any response to heat-related illness, sharing:

If someone faints or gets sick, they send them home. No doctor, no checkup, nothing.²⁰⁸

Even when workers do take medical leave, some reported being pressured to return to work. Shaista, for example, explained that management would pester workers to come back to the factory, "even when we are sick."²⁰⁹

Two workers said that, while their workplaces had medical staff on site, their qualifications were "uncertain"²¹⁰ or "unclear."²¹¹ Others said that even short, medically necessary breaks were not allowed:

I get headaches, dizziness, and my eyes burn. But we cannot stop working.²¹²

Some workers described hierarchical access to whatever medical support exists. Abdullah noted that treatment in his workplace was reserved for only for a privileged few:

²⁰⁶ CRI interview with Gulzar Ali, Karachi, Pakistan, 26 October 2025.

²⁰⁷ CRI interview with Sardar Khan, Karachi, Pakistan, 25 October 2025.

²⁰⁸ CRI interview with Muhammad Sagheer, Karachi, Pakistan, 27 October 2025.

²⁰⁹ CRI interview with Shaista, Karachi, Pakistan, 26 October 2025.

²¹⁰ CRI interview with Samina, Karachi, Pakistan, 28 October 2025.

²¹¹ CRI interview with Amir Zareef, Karachi, Pakistan, 28 October 2025.

²¹² CRI interview with Muhammad Sagheer, Karachi, Pakistan, 27 October 2025.

Medical treatment is only for the few senior, skilled workers or those who have links with supervisors. For people like us, there is nothing, not even a first-aid box.²¹³

Notably, all three mill workers interviewed reported near total absence of medical care in the workplace. Gulzar Ali told CRI:

There is no doctor. Not even a first-aid room.²¹⁴

Muhammad Hunain similarly described the lack of on-site medical care, explaining that his facility lacked even the minimum infrastructure for worker care:

There is no clinic, no doctor, not even a basic first-aid box. If a worker collapses, they call the contractor, who arranges a rickshaw to send the person home. There is no emergency protocol. They don't check blood pressure. As long as you can stand for hours, they take you.²¹⁵

Provincial law requires that first-aid be available on workplace premises.²¹⁶

Barriers to Unionization

None of the workers interviewed reported being members of labor unions. Across both the garment and textile mill sectors, workers described the complete absence of independent worker representation, and some noted widespread fear of collective organizing.

Several workers, like Abdullah, stated plainly that their factories had no unions:

There is no formal labor union representing the workers.²¹⁷

Others described situations in which management had created structures that looked like unions but did not serve the needs of workers. According to Amir Zareef, management in his factory had created what he calls a “pocket union,” which, he said, was explicitly for the purpose of buyer’s inspections and did not serve the interests of workers.

²¹³ CRI interview with Abdullah, Karachi, Pakistan, 27 October 2025.

²¹⁴ CRI interview with Gulzar Ali, Karachi, Pakistan, 26 October 2025.

²¹⁵ CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025.

²¹⁶ Sindh Factory Rules 2021, Section 102 (1) “In every factory there shall be maintained in good working order first aid appliances specified in Appendix ‘I’. The first aid appliances shall be placed under the charge of a responsible person who knows to use them, and shall be kept in a readily accessible place within the factory as to be immediately available during working hours. The words First Aid’ shall be clearly painted on the box or other receptacle containing such appliances. (2) Every person sustaining an injury within a factory shall unless he/she desires otherwise, be administered “First Aid” as per Appendix ‘II’.”

²¹⁷ CRI interview with Abdullah, Karachi, Pakistan, 27 October 2025.

Fear was a recurring theme in workers' accounts, even though discrimination based on union status is prohibited by law.²¹⁸ Munawar Siddiqui explained that, for this reason, he and his colleagues are not involved in labor unions:

There is no union. People are afraid to join anything.²¹⁹

Workers in precarious, contract-based positions, such as mill workers, described even bigger obstacles to organizing, even though provincial law affords them equal protections in this regard.²²⁰ As Muhammad Hunain put it:

There is no labor union in our factory. Workers talk among themselves, but no one is able to organize. People fear losing their jobs. In contract labor, you can be replaced in a day.²²¹

Mir Zulfiqar Ali, a local labor rights activist and the Executive Director of the Workers' Education and Research Organization in Pakistan, echoed workers' concerns, underscoring the absence of independent unions in the garment sector:

There are no real unions, only pocket unions created by management to show compliance, mainly related to GSP+ [an incentive arrangement for sustainable development and good governance that supports developing countries].²²² Without genuine union representation, workers cannot negotiate for heat-stress protocols or demand safe working conditions.²²³

Together, these accounts illustrate how the absence of independent unions leaves workers without formal mechanisms through which to collectively raise concerns or negotiate protections. At the same time, the lack of organization reinforces the feelings of fear, job insecurity, and broader vulnerability described throughout this report.

Limited Workplace Adaptation: Poor Ventilation and Ineffective Indoor Heat Controls

In addition to the lack of enforcement of basic workplace health and safety provisions – including fair pay, adequate break time, access to safe drinking water for hydration, access to clean toilets and sanitation, and worker representation –

²¹⁸ Sindh Industrial Relations Act, 2013, Section 17(c,d).

²¹⁹ CRI interview with Munawar Siddiqui, Karachi, Pakistan, 25 October 2025.

²²⁰ *The Sindh Industrial Relations Act, 2013*, Sindh Act No. XXIX of 2013, Sections 24 - 26.

²²¹ CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025.

²²² GSP Hub, "Pakistan – Country Info," accessed November 15, 2025, <https://gsphub.eu/country-info/Pakistan>

²²³ CRI interview with Mir Zulfiqar Ali, Karachi, Pakistan, 26 October 2025.

industrial heat-adaptation efforts in Pakistan’s garment and textile sector are limited.

On top of the basic health and safety practices mentioned above, occupational heat mitigation recommendations by the International Labour Organization, The World Health Organization, and other prominent international bodies include access to adequate ventilation and air flow, both of which can lower core body temperature – up to certain thresholds²²⁴ – and reduce the risks of adverse health outcomes.²²⁵ Yet workers in Karachi’s garment industry reported that factory-level adoption of these recommendations is uneven. Mir Zulfiqar Ali described the conditions on the ground:

Many garment units are built like sealed boxes. The priority is to protect the product, not the people who stitch it. Workers tell us that owners refuse to open windows because they fear theft of goods. But what it really does is trap the heat inside with the workers.²²⁶

Muhammad Hunain added a first-hand account of these realities, explaining that his workplace has no heat-management systems in place:

There are no fans, no cooling units, no ventilation. They say fans cannot be installed because the cloth hanging from the ceiling blocks air circulation. So instead of fixing the layout or installing proper systems, they choose to do nothing. The workers are simply left to struggle.²²⁷

Gulzar Ail similarly described how his facility’s design makes the heat worse:

Inside, the bed sheets hang from the roof down to the ground for processing. Because of that setup, fans cannot operate properly. But the truth is, there are no fans at all. The sheets trap the heat. Only an air-conditioning system could make this place livable, but the contractor refuses to even install fans.²²⁸

²²⁴ Robert D Meade, Sean R Notley, Nathalie V Kirby, Glen P Kenny, A critical review of the effectiveness of electric fans as a personal cooling intervention in hot weather and heatwaves, *The Lancet Planetary Health*, Volume 8, Issue 4, 2024, Pages e256-e269, ISSN 2542-5196, [https://doi.org/10.1016/S2542-5196\(24\)00030-5](https://doi.org/10.1016/S2542-5196(24)00030-5).

²²⁵ International Labour Organization. (2024). *Heat at work: Implications for safety and health (A Global Review of the Science, Policy and Practice)*. <https://www.ilo.org/publications/heat-work-implications-safety-and-health>; World Health Organization & World Meteorological Organization. (2025, August 22). *WHO, WMO issue new report and guidance to protect workers from increasing heat stress*. Available via <https://www.who.int/news/item/22-08-2025-who-wmo-issue-new-report-and-guidance-to-protect-workers-from-increasing-heat-stress>

²²⁶ CRI interview with Mir Zulfiqar Ali, Karachi, Pakistan, 26 October 2025.

²²⁷ CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025.

²²⁸ CRI interview with Gulzar Ali, Karachi, Pakistan, 26 October 2025.

According to some workers, like Abdullah, management acknowledges the heat, but continues to refuse action:

Supervisors say, 'We know it's hot,' but they don't install cooling systems or give extra breaks. Nothing changes.²²⁹

Even where adaptation measures do exist, they rarely provide enough relief to adequately protect workers. Samina explained:

The factory relies primarily on ceiling fans, which run at full speed throughout the day. However, in a closed space with hundreds of machines running simultaneously, the fans offer minimal relief.

Another worker, Amir Zareef, echoed these sentiments:

Fans are installed, but they provide little relief. The combined heat from factory machinery, human bodies, and the outdoor climate creates oppressive conditions.²³⁰

Sardar Khan summarized the situation plainly:

The fans just move the hot air around. It doesn't actually cool anything.²³¹

Challenges for Mill Workers and Contractual Laborers

In many instances, Climate Rights International's investigation found that mill workers faced even greater vulnerabilities, compared to already-vulnerable garment workers. According to Mir Zulfiqar Ali, these additional risks stem largely from the temporary or contractual employment arrangements common in textile mills. This type of employment status often leaves workers without job security, access to workplace health benefits, and legal protection. Ali elaborated:

Permanent workers may at least get medical support through SESSI [the Sindh provincial government's health facility system for registered laborers], but contractual workers have nothing. If a contract worker collapses from heat exhaustion, they are simply replaced. There is no medical care, no compensation, and no legal protection.²³²

²²⁹ CRI interview with Abdullah, Karachi, Pakistan, 27 October 2025.

²³⁰ CRI interview with Amir Zareef, Karachi, Pakistan, 28 October 2025.

²³¹ CRI interview with Sardar Khan, Karachi, Pakistan, 25 October 2025.

²³² CRI interview with Mir Zulfiqar Ali, Karachi, Pakistan, 26 October 2025.

Hunain, a mill worker, echoed Ali's concerns, explaining that because he works through a contractor, he is not considered an official employee:

It means that legally we are not working for [company name], and we are not entitled to the benefits that proper [company name] employees receive.²³³

Another mill worker, Sardar Kahn, said that contract jobs, which pay workers as day laborers instead of salaried employees, prevent many mill workers from earning minimum wage, sharing that:

It is daily-wage work. If there is no work, we do not come in, and that means no wages. Sometimes, there is no order, and we have to sit at home for days without any income.²³⁴

He later added:

Contractual workers have no rights and are not even considered workers.²³⁵

Gulzar Ali explained:

It's daily-wage work. If you don't come, your pay is cut. Even if we show up in the morning and they say there is no work for two hours, that whole day does not count as a paid day.²³⁶

Subcontracting further complicates the problem. Gulzar Ali, for example, a subcontracted mill worker, told Climate Rights International that the facility in which he works does not function as a regular unit of the company that owns it, but is instead operated through private labor contractors. He claimed that this arrangement allows his workplace to operate largely "off the books," with little oversight, explaining that:

Many of us think running this place separately is a way to avoid buyers' inspections. If inspectors come to the main factory, they will not see this unit. We feel the company wants to hide the working conditions here.²³⁷

²³³ CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025.

²³⁴ CRI interview with Sardar Khan, Karachi, Pakistan, 25 October 2025.

²³⁵ CRI interview with Sardar Khan, Karachi, Pakistan, 25 October 2025.

²³⁶ CRI interview with Gulzar Ali, Karachi, Pakistan, 26 October 2025.

²³⁷ CRI interview with Gulzar Ali, Karachi, Pakistan, 26 October 2025.

V. Heat Adaptation Best Practices

Though the challenges outlined in this report are complex, both governments and businesses can implement a broad range of measures to improve and cool working conditions. This report focuses specifically on workplace heat adaptation strategies relevant to and appropriate for low-resource settings. For a broader review of heat adaptation interventions, refer to Climate Rights International's summary report on heat and human rights, "I Can't Cool."²³⁸

To limit worker exposure to hazards on the job, occupational health and safety experts often refer to the "hierarchy of controls," which outlines five distinct approaches through which to reduce the risk of a hazard. These strategies range from most effective (elimination) to least effective (personal protective equipment). As with any type of policy decision-making, it is necessary to account for variables like cost, feasibility, sustainability, and efficacy when developing an action plan for workplace-level heat stress prevention.²³⁹ In the context of Dhaka's workforce, for example, elimination and/or substitution of ambient heat is not currently possible.

Engineering Controls

After elimination and substitution, the next best option to reduce the risks associated with a workplace hazard, like heat, are engineering controls.²⁴⁰ Engineering controls aim to isolate people from the hazard, which, in the context of heat, means aiming to reduce workplace temperatures.²⁴¹

Air conditioning is one type of engineering intervention. Though air conditioning is the fastest and most effective way to reduce heat exposure and its associated consequences in this context, widespread air conditioning is not currently feasible in Karachi, in part due to a range of financial and infrastructural limitations. It is also not a long-term or sustainable solution. In fact, air conditioning technologies can actually increase surrounding ambient air temperatures. In the short-term, air conditioners can generate heat and drive up the temperatures of surrounding urban areas by as much as 1°C to 2°C.²⁴² And in the long term, widespread use of air

²³⁸ Climate Rights International. "I Can't Cool: Extreme Heat and Human Rights in the Context of Climate Change." Climate Rights International, Feb. 2024, <https://cri.org/reports/i-cant-cool/>.

²³⁹ International Labour Organization. *Heat at Work: Implications for Safety and Health*. 2024, https://www.ilo.org/sites/default/files/2024-07/ILO_OSH_Heatstress-R16.pdf.

²⁴⁰ International Labour Organization. *Heat at Work: Implications for Safety and Health*. Edited by Manal Azzi, Andreas Flouris, Halshka Graczyk, Balint Nafradi, and Natasha Scott, 25 July 2024, <https://www.ilo.org/sites/default/files/2024>

²⁴¹ International Labour Organization. *Heat at Work: Implications for Safety and Health*. Edited by Manal Azzi, Andreas Flouris, Halshka Graczyk, Balint Nafradi, and Natasha Scott, 25 July 2024, <https://www.ilo.org/sites/default/files/2024>

²⁴² Shickman, Kurt. "Action on Sustainable Cooling Starts with Passive Measures." *Sustainable Energy for All*, 28 Oct. 2020, <https://www.seforall.org/news/action-on-s>

conditioning technologies can both increase emissions and release heat-trapping refrigerants into the atmosphere, which actually contributes to global warming.²⁴³ Air conditioning can also increase the risk of power outages, which already plague Karachi in the summer months.²⁴⁴

Instead, more feasible and appropriate cooling interventions for the current context are described below. Still, the design, implementation, and enforcement of some of these interventions will require substantial investment. As such, high-income countries – particularly those that source from, and benefit from, Pakistan’s supply chains – should provide financial support to improve climate adaptation and resilience in Dhaka and across the country. Notably, though, there exist a broad range of effective heat adaptation measures that are generally low cost and that can be implemented almost immediately.

For Karachi’s workers, the implementation of lower-cost and more sustainable cooling interventions will be key to improving health outcomes.²⁴⁵ Electric fans are one possible option. However, in temperatures below 30°C, electric fans are at most 36 percent as effective as air conditioning in terms of reducing core body temperature in older adults, and should therefore be used in combination with other engineering strategies – such as passive cooling techniques – to maximize their benefits. At extremely high temperatures, electric fans become largely ineffective and – in some conditions – detrimental, though there is some debate about the exact threshold at which this occurs.²⁴⁶

Passive cooling is another promising measure for heat adaptation in Karachi. Passive cooling refers to no-or low-energy interventions used to decrease temperature. For indoor workers, one effective passive cooling measure is that of improved ventilation. Factory modeling studies have demonstrated that installing new window types, configuring windows differently, and continuing to use ventilation strategies throughout the nighttime, can together provide reductions of up to 23 percent in “overheated working hours.”²⁴⁷ Researchers have also found that changing workstation arrangements – including seating workers a maximum of 18 meters from windows, changing lighting layouts, and installing low heat-emitting

²⁴³ IEA (2018), *The Future of Cooling*, IEA, Paris <https://www.iea.org/reports/the-future-of-cooling>, Licence: CC BY 4.0

²⁴⁴ Lundgren-Kownacki, K., Hornyanszky, E.D., Chu, T.A. *et al.* Challenges of using air conditioning in an increasingly hot climate. *Int J Biometeorol* 62, 401–412 (2018). <https://doi.org/10.1007/s00484-017-1493-z>

²⁴⁵ Jay, Ollie *et al.* Reducing the health effects of hot weather and heat extremes: from personal cooling strategies to green cities. *The Lancet*, Volume 398, Issue 10301, 709 – 724.

²⁴⁶ Meade, Robert D *et al.* A critical review of the effectiveness of electric fans as a personal cooling intervention in hot weather and heatwaves. *The Lancet Planetary Health*, Volume 8, Issue 4, e256 – e269.

²⁴⁷ Hossain, M. M., Lau, B., Wilson, R., & Ford, B. (2017). Effect of changing window type and ventilation strategy on indoor thermal environment of existing garment factories in Bangladesh. *Architectural Science Review*, 60(4), 299–315. <https://doi.org/10.1080/00038628.2017.1337557>

lights – could further improve worker comfort.²⁴⁸ These interventions can be both retrofitted for old buildings and installed into new ones.

Retrofitting factory rooftops can also help offset high indoor temperatures. A case study conducted in Dhaka, Bangladesh – another major textile producing hub based in a hot climate, like Karachi – found that three separate rooftop interventions – installing rooftop shading, green roofs (extensive planting), and white roofs (covered with reflective paint) – all reduced indoor air temperatures by around 2°C.²⁴⁹ Notably, researchers further found that these interventions reduced the number of working hours in which heat stress measures exceeded the standardized limit for moderate work (WBGT 28°C) by over 600 hours, or the equivalent of 75 eight-hour days per year.²⁵⁰ Other researchers have found that the use of reflective paints on roofs can effectively keep indoor temperatures cooler than outdoors, decreasing indoor air temperatures by an average of 3.5°C, and by as much as 7.72°C during peak heat.²⁵¹ Still, there exist challenges regarding the long-term efficiency of some of these interventions. For example, sun-reflecting paint becomes less effective with dust, rust, and corrosion from high humidity.²⁵²

Expanding greenspace, for example by planting trees, can also help reduce ambient temperatures in urban areas; research estimates that increasing urban greenery can reduce urban heat by as much as 1°C to 4.7°C during hot seasons.²⁵³

²⁴⁸ Hossain, Mohataz. “No Sweat: Easy Ways to Cool Bangladesh Garment Factories.” *RIBA Journal*, 18 Feb. 2021, <https://www.ribaj.com/intelligence/cooling-bangladesh-garment-factories-presidents-awards-for-research-shortlist>.

²⁴⁹ International Organization for Standardization. *ISO 7243:2017 – Ergonomics of the Thermal Environment: Assessment of Heat Stress Using the WBGT (Wet Bulb Globe Temperature) Index*. 3rd ed., Aug. 2017. ISO, <https://www.iso.org/standard/67188.html>; Zhang, Y., et al. “Thermal Performance of a Novel Passive Cooling System for Buildings in Hot Climates.” *Energy and Buildings*, vol. 278, 2023, 112500. Elsevier, <https://doi.org/10.1016/j.enbuild.2023.112500>.

²⁵⁰ These guidelines, developed by the International Organization for Standardization, provide WBGT thresholds for workers based on physical activity level and work intensity; they seek to reduce occupational heat risks. They are described in more detail under the Administrative Controls section below. International Organization for Standardization. *ISO 7243:2017 – Ergonomics of the Thermal Environment: Assessment of Heat Stress Using the WBGT (Wet Bulb Globe Temperature) Index*. 3rd ed., Aug. 2017. ISO, <https://www.iso.org/standard/67188.html>; Zhang, Y., et al. “Thermal Performance of a Novel Passive Cooling System for Buildings in Hot Climates.” *Energy and Buildings*, vol. 278, 2023, 112500. Elsevier, <https://doi.org/10.1016/j.enbuild.2023.112500>.

²⁵¹ Sustainable Energy for All. “The Power of Passive Cooling Solutions in Bangladesh and Indonesia.” *Sustainable Energy for All*, 22 July 2021, <https://www.seforall.org/stories-of-success>

²⁵² Vellingiri S, Dutta P, Singh S, Sathish LM, Pingle S, Brahmhatt B. Combating Climate Change-induced Heat Stress: Assessing Cool Roofs and Its Impact on the Indoor Ambient Temperature of the Households in the Urban Slums of Ahmedabad. *Indian J Occup Environ Med*. 2020 Jan-Apr;24(1):25-29. doi: 10.4103/ijoem.IJOEM_120_19. Epub 2020 Mar 18. PMID: 32435111; PMCID: PMC7227734.

²⁵³ Dashti, Alyaa, and Mohammad Khajah. “Urban Green Areas and Their Impact on Land Surface Temperature in Semi-Arid Environments: A Case Study in Kuwait.” *Environmental Monitoring and Assessment*, vol. 196, no. 4, 2024, pp. 1–15. Springer Nature; *Climate Action Plan for Dhaka South City Corporation*. Dhaka South City Corporation, June 2024, https://dsc.portal.gov.bd/sites/default/files/files/dsc.portal.gov.bd/page/089f17d2_a3ec_4309_a171_5dc_d2d25b13f/2024-06-13-05-17-88d5cb2246c32a2f9f94c43f8337d977.pdf; *Climate Action Plan for Dhaka North City Corporation*. Dhaka North City Corporation, May 2024; Yue Cai, Chong Li, Lei Ye, Longdong Xiao, Xueyan

In the longer term, indoor workplaces should explore the potential of emerging technologies, including solar-powered cooling and/or water-based cooling.²⁵⁴

Administrative Controls

Beyond engineering interventions, administrative controls can also help to protect workers from heat-related risks. Administrative controls are policies that seek to reduce workers' exposure to excessive heat; these types of policies generally change the way people work, and primarily involve strategies such as training and job rotation, though they may not always directly target the specific vulnerabilities and risks caused by heat.²⁵⁵

Research indicates that adaptive practices are strongly influenced by demographic factors like education, socioeconomic status, and occupation – and that workers who have higher levels of education and income are more likely to understand and use heat adaptation strategies.²⁵⁶ For low-income workers with limited formal education, like those interviewed by Climate Rights International in Karachi, targeted education interventions will be especially critical, as education about protective measures can lead to improved health outcomes.²⁵⁷

Arguably one of the simplest and most important heat adaptation interventions for workers in Karachi will be the development and enforcement of science-backed work-to-rest ratios, or work-rest cycles. Work-to-rest ratios determine how much time a person needs to rest – ideally in a shaded or cooler environment – to effectively recover and lower core body temperature before starting to work again. These ratios account for a person's level of physical exertion, assigning longer rest periods to workers who engage in more strenuous tasks. To be effective, work-to-

Gao, Lufeng Mo, Huaqiang Du, Yufeng Zhou, Guomo Zhou, Effect of the roadside tree canopy structure and the surrounding on the daytime urban air temperature in summer, *Agricultural and Forest Meteorology*, Volume 316, 2022, 108850, ISSN 0168-1923, <https://doi.org/10.1016/j.agrformet.2022.108850>

²⁵⁴ Qudama Al-Yasiri, Márta Szabó, Müslüm Arıcı, A review on solar-powered cooling and air-conditioning systems for building applications, *Energy Reports*, Volume 8, 2022, Pages 2888-2907, ISSN 2352-4847, <https://doi.org/10.1016/j.egy.2022.01.172>; International Labour Organization. *Heat at Work: Implications for Safety and Health*. International Labour Organization, 2024. https://www.ilo.org/sites/default/files/2024-07/ILO_OSH_Heatstress-R16.pdf;

²⁵⁵ International Labour Organization. *Heat at Work: Implications for Safety and Health*. 2024, https://www.ilo.org/sites/default/files/2024-07/ILO_OSH_Heatstress-R16.pdf.; Morris, Gary A., and Ryan Cannady. "Proper Use of the Hierarchy of Controls." *Professional Safety*, vol. 64, no. 8, Aug. 2019, pp. 37–40. American Society of Safety Professionals.

²⁵⁶ Sheikh Mohiuddin Shahrujjaman, Bivuti Bhushan Sikder, Dilara Zahid, Bikash Pal, Heat Wave Adaptation Strategies among Informal Workers in an Urban Setting: A Study in Dhaka City, Bangladesh, *Natural Hazards Research*, 2025, ISSN 2666-5921, <https://doi.org/10.1016/j.nhres.2025.01.006>.

²⁵⁷ El-Said, Faiza Mohamed, et al. "Impact of Tailored Educational Intervention on Knowledge and Health Related Behaviors among Outdoors Working Pregnant Women Regarding Climate Change." *Egyptian Journal of Health Care*, vol. 16, no. 2, June 2025, pp. 226–244. https://ejhc.journals.ekb.eg/article_426393.html.; Razzak JA, Agrawal P, Chand Z, Quraishy S, Ghaffar A, Hyder AA. Impact of community education on heat-related health outcomes and heat literacy among low-income communities in Karachi, Pakistan: a randomised controlled trial. *BMJ Glob Health*. 2022 Jan;7(1):e006845. doi: 10.1136/bmjgh-2021-006845. PMID: 35101860; PMCID: PMC8804631.

rest ratios should be based on real-time environmental conditions, including wet-bulb globe temperature (WBGT) – a measure of heat stress that accounts for several factors including temperature, humidity, wind, and sun exposure.²⁵⁸

Behavioral adaptation interventions like these, when combined with adequate hydration – and shade, where applicable – have repeatedly proven effective in terms of protecting worker health.²⁵⁹ And while these efforts may decrease the total amount of minutes worked each day, some emerging evidence suggests that there are no associated productivity losses, likely because healthier workers are more likely to show up to work and be more productive.²⁶⁰ Moreover, some case studies that combine multiple heat-adaptive interventions, including recent research conducted by the Sri Ramachandra Institute among brick kiln laborers in India, actually demonstrate the ways in which protective measures can increase worker productivity.²⁶¹

In order to best protect workers from heat-related risks, work-to-rest ratios should include maximum heat thresholds at which work must be stopped. Ideally, these thresholds should be based on both air temperature and relative humidity levels, as has been done in other countries in Asia, including China, Vietnam, and Thailand.²⁶² These cycles should also include separate measures to help new workers, who are particularly sensitive to heat, to acclimatize by allowing them additional time to adjust to the physiological impacts of performing heavy work in hot conditions.

Other administrative controls include schedule adjustments to help workers avoid working in peak heat conditions; job rotation to ensure that those exposed to radiant

²⁵⁸ International Organization for Standardization. *ISO 7243:2017 – Ergonomics of the Thermal Environment: Assessment of Heat Stress Using the WBGT (Wet Bulb Globe Temperature) Index*. International Organization for Standardization, 12 Sept. 2017. [ISO,https://www.iso.org/standard/67188.html](https://www.iso.org/standard/67188.html). Accessed 27 June 2025.

²⁵⁹ Schlader ZJ, Boswell T, Prince H, Wesseling C, Amorim FA, Neupane D, Arias E, Poveda S, Hansson E, Lucas RAI, Jakobsson K, Wegman DH, Glaser J. A Rest-Shade-Hydration-Hygiene program reduces acute kidney injury and increases production at a sugar mill in Nicaragua, an economic analysis. medRxiv [Preprint]. 2025 Feb 21:2025.02.19.25322486. doi: 10.1101/2025.02.19.25322486. PMID: 40034750; PMCID: PMC11875259.

²⁶⁰ Hansson E, Jakobsson K, Glaser J, Wesseling C, Chavarria D, Lucas RAI, Prince H, Wegman DH. Impact of heat and a rest-shade-hydration intervention program on productivity of piece-paid industrial agricultural workers at risk of chronic kidney disease of nontraditional origin. *Ann Work Expo Health*. 2024 Apr 22;68(4):366-375. doi: 10.1093/annweh/wxae007. PMID: 38367206; PMCID: PMC11033565; Schlader ZJ, Boswell T, Prince H, Wesseling C, Amorim FA, Neupane D, Arias E, Poveda S, Hansson E, Lucas RAI, Jakobsson K, Wegman DH, Glaser J. A Rest-Shade-Hydration-Hygiene program reduces acute kidney injury and increases production at a sugar mill in Nicaragua, an economic analysis. medRxiv [Preprint]. 2025 Feb 21:2025.02.19.25322486. doi: 10.1101/2025.02.19.25322486. PMID: 40034750; PMCID: PMC11875259.

²⁶¹ International Labour Organization. *Heat at Work: Implications for Safety and Health*. International Labour Organization, 2024.https://www.ilo.org/sites/default/files/2024-07/ILO_OSH_Heatstress-R16.pdf.

²⁶² Judd, Jason, et al. *Higher Ground? Fashion's Climate Breakdown and Its Effect for Workers*. Cornell University ILR School, Global Labor Institute, Sept. 2023,<https://www.ilr.cornell.edu/sites/default/files-d8/2023-09/Higher%20Ground%20Report%201%20FINAL.pdf>; International Labour Organization. *Ensuring Safety and Health at Work in a Changing Climate: Protecting Workers from Heat Stress*. July 2024,https://www.ilo.org/sites/default/files/2024-07/ILO_OSH_Heatstress-R16.pdf.

sources of heat, like irons or hot machinery, have breaks during peak heat hours; ensuring access to safe water and bathrooms at the worksite; ensuring adequate hydration; guaranteeing that workers are not penalized for taking additional rest or hydration breaks in the heat; and implementing adequate breaks and return-to-work standards to ensure workers are able to fully recover following heat-related illness.²⁶³ As with most workplace controls, employer buy-in is key to the execution and impact of any of these interventions, and overcoming this barrier will be critical in shaping the future of Karachi's workforce. Future research should consider assessing employer return-on-investment for worker climate and health education programs.

Workplace-specific administrative controls will be most effective when combined with broader-level financial supports. These types of interventions might include heat insurance for at-risk workers, as has been piloted in India, that can help cover lost wages due to reduced or missed hours caused by climate-driven extreme heat.²⁶⁴ Still, despite the obvious benefits to workers, there are concerns about the long-term viability of these programs. The increasing frequency of payouts, for example, is a major concern – and has already caused some programs in developing countries – for example, in Kenya – to shut down.²⁶⁵ At present, heat insurance schemes in the developing world are largely subsidized by nonprofit groups, national governments, or wealthy countries.²⁶⁶

Personal Protective Equipment

Some types of personal protective equipment (PPE) can also help to protect workers from the heat. Workplaces in Karachi should encourage workers to wear casual and lightweight clothing while at work and to remove unnecessary aprons or layers as necessary, including during buyer visits. Businesses should also consider investing in personal cooling devices and garments for workers – such as cooling bandanas, vests, or headwear, which have been proven to help keep worker core body temperature within healthy limits, even in high heat – and/or wearable devices to more closely monitor worker health in hot conditions.²⁶⁷

²⁶³ International Labour Organization. *Heat at Work: Implications for Safety and Health*. 25 July 2024, https://www.ilo.org/sites/default/files/2024-07/ILO_OSH_Heatstress-R16.pdf.

²⁶⁴ Arsht-Rockefeller Foundation Resilience Center. "Extreme Heat Protection Initiative." *One Billion Resilient*, <https://onebillionresilient.org/project/extreme-heat-protection-initiative/>. Accessed 1 May 2025.

²⁶⁵ Dickie, Gloria, et al. "Climate Change Is Making It Harder for Low-Income Workers to Earn a Living. This Insurance Could Help." *World Economic Forum*, 25 May 2023, www.weforum.org/stories/2023/05/parametric-insurance-adapt-climate-change-risks/. Accessed 1 May 2025.

²⁶⁶ Dickie, Gloria, et al. "Climate Change Is Making It Harder for Low-Income Workers to Earn a Living. This Insurance Could Help." *World Economic Forum*, 25 May 2023, www.weforum.org/stories/2023/05/parametric-insurance-adapt-climate-change-risks/. Accessed 1 May 2025.

²⁶⁷ Tetzlaff EJ, Ioannou LG, O'Connor FK, Kaltsatou A, Ly V, Kenny GP. Practical Considerations for Using Personal Cooling Garments for Heat Stress Management in Physically Demanding Occupations: A Systematic Review and Meta-Analysis Using Realist Evaluation. *Am J Ind Med*. 2025 Jan;68(1):3-25. doi: 10.1002/ajim.23672. Epub 2024 Nov 5. PMID: 39498663; PMCID: PMC11646365; Bonell A, Nadjm B, Samateh T,

At the same time, workplaces should also account for the added heat burden associated with some more traditional types of personal protective equipment – like masks or heavy clothing – and adjust work intensity accordingly.²⁶⁸

Badjie J, Perry-Thomas R, Forrest K, Prentice AM, Maxwell NS. Impact of Personal Cooling on Performance, Comfort and Heat Strain of Healthcare Workers in PPE, a Study From West Africa. *Front Public Health*. 2021 Sep 1;9:712481. doi: 10.3389/fpubh.2021.712481. PMID: 34540787; PMCID: PMC8440920; Chicas R, Xiuhtecutli N, Elon L, Scammell MK, Steenland K, Hertzberg V, McCauley L. Cooling Interventions Among Agricultural Workers: A Pilot Study. *Workplace Health Saf*. 2021 Jul;69(7):315-322. doi: 10.1177/2165079920976524. Epub 2020 Dec 24. PMID: 33357122; PMCID: PMC8693251; "Battling Heatstroke with Wearable Technology." *Tokyo Updates*, 7 May 2025, <https://www.tokyoupdates.metro.tokyo.lg.jp/en/post-1505/>. Accessed 21 May 2025.

²⁶⁸ Williams, W. Jon, PhD, and Jaclyn Krah Cichowicz, MA. "Heat Stress Imposed by PPE Worn in Hot and Humid Environments." *NIOSH Science Blog*, Centers for Disease Control and Prevention, 6 Aug. 2020, blogs.cdc.gov/niosh-science-blog/2020/08/06/ppe-heat-stress/.

VI. Pakistan’s Legal Framework and Relevant Policy Commitments

The working conditions of garment and textile laborers in Pakistan are governed by a complex legal and policy matrix. This framework encompasses constitutional guarantees, provincial labor laws, occupational safety regulations, climate change policies, and Pakistan’s international commitments.

Although these instruments collectively establish a foundation for protecting worker health and safety, practical implementation is limited. Persistent regulatory gaps, inadequate enforcement, and the exclusion of informal workers together create a significant disconnect between legal provisions and conditions on the ground.

The sections below both summarize and critically examine the legal and policy landscape regarding workplace safety in Pakistan, and more specifically Sindh province, focusing on the implications for heat stress and environmental conditions inside garment factories.

The Constitution of Pakistan

The Constitution of Pakistan contains protections and principles that inform labor law and workers’ rights protections, including prohibitions against forced labor and guarantees of freedom of association that underpin trade-union rights and collective bargaining.²⁶⁹ These constitutional norms are the legal backdrop for statutory protections and rights-based claims concerning the protection of health and life at work.

Importantly, Pakistan’s Constitution also explicitly protects the right to a healthy environment. In October 2024, the 26th amendment introduced article 9A, which guarantees that “every person shall be entitled to a clean, healthy and sustainable environment.”²⁷⁰ This amendment builds on three decades of judicial interpretation in which Pakistan’s courts have recognized environmental protection and climate resilience as constitutional rights and key requisites of the rights to life and dignity under Articles 9 and 14, a development that has direct relevance for workplace health.²⁷¹

²⁶⁹ Constitution of the Islamic Republic of Pakistan, Article 11(3) (“No person shall be required to perform forced labour.”); Constitution of the Islamic Republic of Pakistan, Article 17(1) (“Every citizen shall have the right to form associations or unions, subject to any reasonable restrictions imposed by law in the interest of sovereignty or integrity of Pakistan, public order or morality.”).

²⁷⁰ Constitution of the Islamic Republic of Pakistan, Article 9A (“Every person shall have the right to a clean, healthy and sustainable environment.”).

²⁷¹ Shehla Zia v. WAPDA, PLD 1994 SC 693, Supreme Court of Pakistan (1994); Leghari v. Federation of Pakistan, W.P. No. 25501/2015, Supreme Court of Pakistan (2015); Constitution of the Islamic Republic of Pakistan, Article 9 (“No person shall be deprived of life or liberty save in accordance with law.”); Constitution of

In 2010, following the passage of the 18th amendment, responsibility for labor, health, environment, and workplace oversight shifted from federal to provincial governments.²⁷² As a result, Sindh province has enacted several laws specifically governing occupational safety and health.

Implementation continues to present a core structural challenge. Chronic under-resourcing is a key part of the problem. And as labor researcher Mir Zulfiqar Ali of WERO described, and the worker testimony detailed throughout this report indicates, “There is no proper implementation of these laws.”²⁷³

Labor Laws, Workplace Safety Regulations, and Other Relevant Commitments

Sindh Occupational Safety and Health Act 2017 and Rules 2019

Following the deadly Ali Enterprises fire of 2012, in which locked workplace exits and a broader absence of safety systems together killed over 250 workers in Karachi, Sindh enacted the most significant occupational health and safety legislation in its history.²⁷⁴

The legal framework imposes broad duties on employers while providing specific technical requirements, particularly regarding environmental controls. The 2017 Act places a general duty on all employers to actively prevent and control hazards in the workplace. This hazard prevention duty explicitly covers physical, chemical, biological, radiological, ergonomic, and psychosocial risks.²⁷⁵ The act further outlines enforcement mechanisms, including by establishing a structure for appointing inspectors and prescribing penalties for non-compliance.²⁷⁶

Implementation of the 2017 Act is governed by the subsidiary Occupational Health and Safety Rules of 2019, which outline both thermal and air quality standards, among others, for safe workplaces.²⁷⁷ Standards ban artificial humidification when dry-bulb temperature (a standard temperature measure that does not account for humidity) exceeds 30C (85F); obligate employers to appoint competent persons to record wet and dry bulb temperatures three times each day (at 7am, 11am, and

the Islamic Republic of Pakistan, Article 14 (“Dignity of man and, subject to law, the privacy of home, shall be inviolable.”)

²⁷² Constitution (Eighteenth Amendment) Act, 2010, Constitution of the Islamic Republic of Pakistan; B. A. Malik, “18th Amendment and way ahead,” *Dawn*, April 18, 2010, <https://www.dawn.com/news/869899/18th-amendment-and-way-ahead>

²⁷³ CRI interview with Mir Zulfiqar Ali, Karachi, Pakistan, 26 October 2025.

²⁷⁴ Sindh Occupational Safety and Health Act, 2017, Sindh Act No. I of 2018; Azeem Samar. The News. “Sindh Assembly passes Occupational Safety and Health Bill 2017.” Nov 18, 2017 <https://www.thenews.com.pk/print/245409-sindh-assembly-passes-occupational-safety-and-health-bill-2017>

²⁷⁵ *Sindh Occupational Safety & Health Act, 2017*, § 4(4)(d) (Sindh).

²⁷⁶ *Sindh Occupational Safety & Health Act, 2017*, §§ 18, 19, 30, 39.

²⁷⁷ Sindh Occupational Safety & Health Rules, 2019, Sindh, Notification No. L-II-2-2-2019.

2pm); mandate ventilation openings in every factory room, specified at the proportion of five square feet for each worker, designed to ensure a continuous supply of fresh air; and require free, clean drinking water to be provided at a temperature below 90F (around 32C).²⁷⁸

Despite these clear regulations, CRI's investigation highlights a dangerous disconnect between legal requirements and workplace practices, and widespread failure to comply with the standards in the Occupational Health and Safety Rules.

Sindh Factories Act 2015 and Sindh Factories Rules 2021

The Sindh Factories Act provides a detailed framework for regulating labor law in factories, including provisions on workplace temperature regulation, especially relevant for Karachi's heat-exposed industrial clusters, including textile factories. The act requires that effective and suitable provisions shall be taken in every work room to ensure "adequate ventilation by the circulation of fresh air" and temperatures to ensure "reasonable conditions of comfort" and injury prevention.²⁷⁹ In particular, the Act states that the "government may prescribe a standard of adequate ventilation and reasonable temperature for any factory or class or description of factories or parts thereof and direct that a thermometer shall be provided and maintained in such place and position as may be specified."²⁸⁰ It further clarifies that factory roofs and walls must be built to keep indoor temperatures "as low as practicable."²⁸¹ If it becomes apparent to the government that any factory is experiencing "excessively high" temperatures, the government may require that insulating, white-washing (painting roofs with reflective paint to reduce heat absorption), or other adaptive methods be undertaken.²⁸²

The act further requires that factories with more than 250 workers must supply cooled drinking water during hot months, and that factories with more than 150 workers "may" be required to provide rest shelters to prevent heat exposure during break time.²⁸³

Finally, the act states that no worker shall work more than nine hours in a single day, more than 48 hours in a single week, or more than six continuous hours without

²⁷⁸ *Sindh Occupational Safety & Health Rules, 2019*, Rule 8(B), (E) (Sindh).

²⁷⁹ Sindh Factories Act, 2015 (XIII of 2016). Section 17. (Government of Sindh). Available via <https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Factories%20Act%202015.pdf>

²⁸⁰ Sindh Factories Act, 2015 (XIII of 2016). Section 17. (Government of Sindh). Available via <https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Factories%20Act%202015.pdf>

²⁸¹ Sindh Factories Act, 2015 (XIII of 2016). Section 17. (Government of Sindh). Available via <https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Factories%20Act%202015.pdf>

²⁸² Sindh Factories Act, 2015 (XIII of 2016). Section 17. (Government of Sindh). Available via <https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Factories%20Act%202015.pdf>

²⁸³ Sindh Factories Act, 2015 (XIII of 2016). Sections 23 & 51. (Government of Sindh). Available via <https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Factories%20Act%202015.pdf>

a break.²⁸⁴ It also prohibits work on Sundays, unless written notice is provided and a full-day holiday is given on one of the three days before or after that day, and provides for 16 days of paid sick leave each year.²⁸⁵

Implementation of the Act is governed by the Sindh Factories Rules, published in 2021, which outline further standards for factory operations. These include requirements that factory ventilation openings should be “provided in the proportion of five square feet for each person” in order to “admit a continuous supply of fresh air.”²⁸⁶ The rules also state that the Chief Inspector of Factories for the Province of Sindh may relax these rules based on his opinion that the relaxation will be “without hazard to the health” of the employees.²⁸⁷ In factories where more than 100 workers are ordinarily employed, free access is required to “one or more suitable rooms or sheds for the use of workers during periods of rest.”²⁸⁸ These spaces must be “properly ventilated so as to admit fresh air at all times,” and roofs cannot be made of “corrugated sheeting or other metal unless covered-by a suitable heat resisting material.”²⁸⁹

The rules further outline specific standards and requirements for devices and practices used to measure temperature, humidity, and “cooling power of the atmosphere,” all of which require regular measurement at standard intervals, with readings made available for certification by an inspector.²⁹⁰ The rules also ban artificial humidification at dry-bulb temperatures above 30C/85F, except for “the unavoidable escape of steam or water vapour into the atmosphere directly due to the treatment of Fibre or fabric by water or steam in its passage through a machine,” which is a key contributor to increasing humidity levels in these contexts.²⁹¹

²⁸⁴ Sindh Factories Act, 2015 (XIII of 2016). Sections 57-58. (Government of Sindh). Available via <https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Factories%20Act%202015.pdf>

²⁸⁵ Sindh Factories Act, 2015 (XIII of 2016). Sections 57-58. (Government of Sindh). Available via <https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Factories%20Act%202015.pdf>

²⁸⁶ Sindh Factories Rules, 2021, Section 24. (Government of Sindh). Available via; https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Factories%20Rules%202021%20on%2030th%20july%202021.pdf?utm_

²⁸⁷ Sindh Factories Rules, 2021, Section 24. (Government of Sindh). Available via; https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Factories%20Rules%202021%20on%2030th%20july%202021.pdf?utm_

²⁸⁸ Sindh Factories Rules, 2021, Section 53 (Government of Sindh). Available via; https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Factories%20Rules%202021%20on%2030th%20july%202021.pdf?utm_

²⁸⁹ Sindh Factories Rules, 2021, Section 53 (Government of Sindh). Available via; https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Factories%20Rules%202021%20on%2030th%20july%202021.pdf?utm_

²⁹⁰ Sindh Factories Rules, 2021, Sections 17, 18, 19, 27a, 2d. (Government of Sindh). Available via; https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Factories%20Rules%202021%20on%2030th%20july%202021.pdf?utm_

²⁹¹ Sindh Factories Rules, 2021, Sections 27a, 2d. (Government of Sindh). Available via; https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Factories%20Rules%202021%20on%2030th%20july%202021.pdf?utm_

On hydration, the rules require that water be provided free of charge at a rate of one gallon per day for every person employed in the factory.²⁹² Where there is no continuous source of water supply, stored water should be provided for at least five gallons per worker per day.²⁹³

Additionally, in every factory employing 500 or more workers, a medical technician or paramedic should be present to both drive an ambulance or provide “crucial emergency medical care.”²⁹⁴ Factories employing 1000 or more workers “on any day during the preceding twelve months” is required to have a “dispensary” run by a qualified medical practitioner assisted by at least one qualified nurse that is to be used “only for the purpose of first aid treatment ... and rest.”²⁹⁵ The dispensary is required to be at least 250 square feet and either “be ventilated or air-conditioned.”²⁹⁶

Together, these provisions create a legal basis for regulating indoor factory heat, though it is clear from the interviews conducted by Climate Rights International that compliance remains inadequate.

Sindh Industrial Relations Act (SIRA) 2013

SIRA regulations govern trade unions, industrial relations, and dispute settlement.²⁹⁷ While the Act itself does not directly legislate workplace temperature, it enables collective bargaining and worker representation that could help address heat-related safety concerns.²⁹⁸ Yet as highlighted by Ali, “most factories in Karachi have no labor unions,” limiting workers’ ability to advocate for heat-safety compliance.²⁹⁹

SIRA mandates the establishment of a Workers Management Council in every establishment employing more than 50 workers.³⁰⁰ The Council’s functions include securing and preserving good labor management relations and looking after “conditions of safety, health and job satisfaction,”³⁰¹ in addition to maintaining

²⁹² Sindh Factories Rules, 2021, Section 22 (42) (Government of Sindh). Available via; Available via; [https://clr.org.pk/Labour-](https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Factories%20Rules%202021%20on%2030th%20july%202021.pdf?utm_)

[Laws/Sindh/Sindh%20Factories%20Rules%202021%20on%2030th%20july%202021.pdf?utm_](https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Factories%20Rules%202021%20on%2030th%20july%202021.pdf?utm_)

²⁹³ Sindh Factories Rules, 2021, Section 23 (43) (b). (Government of Sindh). Available via;

<https://clr.org.pk/Labour->

[Laws/Sindh/Sindh%20Factories%20Rules%202021%20on%2030th%20july%202021.pdf?utm_](https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Factories%20Rules%202021%20on%2030th%20july%202021.pdf?utm_)

²⁹⁴ Sindh Factories Rules, 2021, Section 53 (Government of Sindh). Available via; [https://clr.org.pk/Labour-](https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Factories%20Rules%202021%20on%2030th%20july%202021.pdf?utm_)

[Laws/Sindh/Sindh%20Factories%20Rules%202021%20on%2030th%20july%202021.pdf?utm_](https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Factories%20Rules%202021%20on%2030th%20july%202021.pdf?utm_)

²⁹⁵ Sindh Factories Rules, 2021, Section 53 (Government of Sindh). Available via; [https://clr.org.pk/Labour-](https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Factories%20Rules%202021%20on%2030th%20july%202021.pdf?utm_)

[Laws/Sindh/Sindh%20Factories%20Rules%202021%20on%2030th%20july%202021.pdf?utm_](https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Factories%20Rules%202021%20on%2030th%20july%202021.pdf?utm_)

²⁹⁶ Sindh Factories Rules, 2021, Section 53 (Government of Sindh). Available via; [https://clr.org.pk/Labour-](https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Factories%20Rules%202021%20on%2030th%20july%202021.pdf?utm_)

[Laws/Sindh/Sindh%20Factories%20Rules%202021%20on%2030th%20july%202021.pdf?utm_](https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Factories%20Rules%202021%20on%2030th%20july%202021.pdf?utm_)

²⁹⁷ *The Sindh Industrial Relations Act, 2013*, Sindh Act No. XXIX of 2013.

²⁹⁸ *The Sindh Industrial Relations Act, 2013*, Sindh Act No. XXIX of 2013, Sections 24 - 26.

²⁹⁹ CRI interview with Mir Zulfiqar Ali, Karachi, Pakistan, 26 October 2025.

³⁰⁰ *The Sindh Industrial Relations Act, 2013*, Sindh Act No. XXIX of 2013, Sections 29.

³⁰¹ *The Sindh Industrial Relations Act, 2013*, Sindh Act No. XXIX of 2013, Sections 29, viii.

“continuous sympathy and understanding between the employer and the workmen,” and providing the “minimum facilities for such of the workers employed through contractors as are not covered by the laws relating to welfare of workers.”³⁰²

Sindh Minimum Wages Act (2015, updated 2025)

As of 2025, the Sindh Minimum Wages Act revised the minimum wage to 40,000 PKR/month for all "unskilled adult and adolescent workers working in any industrial or commercial establishment, whether registered or unregistered, throughout Sindh."³⁰³ For piece-rate workers, or contract workers who earn income based on output, as opposed to being paid a set salary, the Act requires that employers pay at least 192 PKR per hour on any working day.³⁰⁴

Sindh Payment of Wages Act (2015)

The Sindh Payment of Wages Act regulates how and when workers must be paid and what deductions are allowed, with the purpose of protecting workers from wage theft, delays, and unfair penalties.³⁰⁵ It requires timely payment, within the wage period; protection from unlawful or unanticipated deductions; and establishes an authority to hear claims of delayed or unpaid wages, including illegal deductions.³⁰⁶

Domestic Human Rights Framework

Sindh Human Rights Commission (SHRC)

The SHRC is a statutory body established under the Sindh Protection of Human Rights Act 2011, with a mandate to provide for the protection of human rights across the province and inquire into complaints of violations and negligence.³⁰⁷ Importantly, the Commission identifies rising temperatures as a human rights concern, including in its 2023 – 2027 Strategic Plan.³⁰⁸ The Commission works in coordination with the Sindh Occupational Health and Safety Council on issues of occupational health and safety and therefore could in theory take high workplace

³⁰² *The Sindh Industrial Relations Act, 2013*, Sindh Act No. XXIX of 2013, Sections 29, v-vi.

³⁰³ Sindh Minimum Wages Act, 2015 (Sindh Act No. VIII of 2016) Available via: https://natlex.ilo.org/dyn/natlex2/r/natlex/fe/details?p3_isn=102145; 2025 Amendment to the Sindh Minimum Wages Act, 2015 (Sindh Act No. VIII of 2016) Available via:

<https://www.sessi.gov.pk/Unskilled%20Minimum%20Wage%2025-26.pdf>

³⁰⁴ Sindh Minimum Wages Act, 2015 (Sindh Act No. VIII of 2016) Available via: https://natlex.ilo.org/dyn/natlex2/r/natlex/fe/details?p3_isn=102145; 2025 Amendment to the Sindh Minimum Wages Act, 2015 (Sindh Act No. VIII of 2016) Available via:

<https://www.sessi.gov.pk/Unskilled%20Minimum%20Wage%2025-26.pdf>

³⁰⁵ Sindh Payment of Wages Act, 2015 (Sindh Act VI of 2017). Available at: <https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Payment%20of%20Wages%20Act%202015.pdf>

³⁰⁶ Sindh Payment of Wages Act, 2015 (Sindh Act VI of 2017). Available at: <https://clr.org.pk/Labour-Laws/Sindh/Sindh%20Payment%20of%20Wages%20Act%202015.pdf>

³⁰⁷ Sindh Protection of Human Rights Act, 2011 (Sindh Act XIII of 2011), § 4(1)(i).

³⁰⁸ Sindh Human Rights Commission. *Strategic Plan 2023-2027*. Karachi: SHRC-Sindh. Available at: <https://www.shrc.org.pk/downloads/SHRC-Strategic-Plan-2023-2027.pdf>

temperature concerns forward under its human rights mandate. Nonetheless, its capacity to act on any factory-level violations is limited by available resources and the systemic weaknesses of provincial enforcement systems.

National Action Plan on Business and Human Rights (2021 - 2026)

At the national level, Pakistan's National Action Plan (NAP) on Business and Human Rights situates workplace safety, including heat exposure, within the country's broader human rights commitments.³⁰⁹ The NAP – a five-year government strategy to protect fundamental rights from business impacts, strengthen remedy mechanisms, and improve human rights standards – highlights inadequate temperature control as a systemic hazard.³¹⁰ The plan acknowledges the existence of adaptation-related legal protections in place, such as ventilation and drinking water requirements, and calls for the modernization of occupational health and safety legislation, as well as independent enforcement mechanisms.³¹¹ More broadly, it emphasizes the need for stronger protections for vulnerable workers, including women and older workers, who face increased risks in the context of heat.³¹²

Pakistan's Climate Commitments

The Paris Agreement

As a signatory of the 2015 Paris Agreement and a party to the United Nations Framework Convention on Climate Change (UNFCCC), Pakistan is required to submit a Nationally Determined Contribution (NDC) every five years, outlining its plans for mitigation and adaptation under the agreement.³¹³ Pakistan most recently submitted an updated NDC in 2025, which outlines broad adaptation and mitigation goals, and promises to include workers in social dialogue around just transition planning and decision-making.³¹⁴ Though the NDC does outline more general efforts

³⁰⁹ Ministry of Human Rights, Government of Pakistan. *National Action Plan on Business and Human Rights (2021-2026)*. September 2021. Available at: <https://globalnaps.org/wp-content/uploads/2024/01/NAP-Pakistan-2021-2026-English.pdf>

³¹⁰ Ministry of Human Rights, Government of Pakistan. *National Action Plan on Business and Human Rights (2021-2026)*. September 2021. Available at: <https://globalnaps.org/wp-content/uploads/2024/01/NAP-Pakistan-2021-2026-English.pdf>

³¹¹ Ministry of Human Rights, Government of Pakistan. *National Action Plan on Business and Human Rights (2021-2026)*. September 2021. Available at: <https://globalnaps.org/wp-content/uploads/2024/01/NAP-Pakistan-2021-2026-English.pdf>

³¹² Ministry of Human Rights, Government of Pakistan. *National Action Plan on Business and Human Rights (2021-2026)*. September 2021. Available at: <https://globalnaps.org/wp-content/uploads/2024/01/NAP-Pakistan-2021-2026-English.pdf>

³¹³ *Paris Agreement*. United Nations Framework Convention on Climate Change, 12 Dec. 2015.

³¹⁴ Government of Pakistan. *Pakistan NDC 3.0* (submitted to United Nations Framework Convention on Climate Change, 24 September 2025). Available at: https://unfccc.int/sites/default/files/2025-09/Pakistan_NDC3.0_24%20Sep.pdf

on heat mitigation and climate-resilience, it does not include any specific initiatives targeted toward protecting industrial and/or indoor workers from extreme heat.³¹⁵

Pakistan's National Climate Change Policy (NCCP) 2021

The NCCP, updated most recently in 2021, outlines the country's approach to addressing climate-related risks, including those related to heat, through broad adaptation and mitigation strategies. Although it does not establish specific workplace heat safety standards, as these responsibilities are assigned via provincial labor legislation, it defines key climate threats to industrial operations and emphasizes the need for infrastructure resilience, resource management, and sectoral planning.³¹⁶

The text of the policy recognizes that Pakistan is highly vulnerable to intensifying heat waves and rising temperatures that together contribute to extreme weather and severe water-stress conditions.³¹⁷ To address these risks, the policy promotes eco-system-based adaptation, calling for the expansion and protection for forests and other greenspace to help moderate extreme heat events. While the policy includes efforts to protect agricultural workers from climate risks and to reduce to reduce emissions in the industrial sector, it does not contain any specific plans to protect factory and/or mill workers from the effects of rising workplace temperatures.

The NCCP also highlights the need for climate-resilient infrastructure. As part of these efforts, the policy calls for the development and adoption of a national "Green Building Code" to reduce environmental impacts and promote sustainable and climate-responsive building design.³¹⁸

Pakistan's National Adaptation Plan (NAP) 2023

Pakistan's adaptation plan frames rising temperatures and extreme heat as among the country's most severe climate threats, particularly for urban areas, where the urban heat island effect is already compounding hot extremes.³¹⁹ The plan notes that even in "average" years, temperatures in Pakistan routinely exceed 30°C (86°F) for months at a time, and routinely cross 40°C (104°F), noting how heatwaves drive

³¹⁵ Government of Pakistan. *Pakistan NDC 3.0* (submitted to United Nations Framework Convention on Climate Change, 24 September 2025). Available at: https://unfccc.int/sites/default/files/2025-09/Pakistan_NDC3.0_24%20Sep.pdf

³¹⁶ Ministry of Climate Change (MoCC), Government of Pakistan. *Pakistan's National Climate Change Policy (2021)*. Islamabad: MoCC. Available at: <https://www.mocc.gov.pk/SiteImage/Policy/NCCP%20Report.pdf>

³¹⁷ Ministry of Climate Change (MoCC), Government of Pakistan. *Pakistan's National Climate Change Policy (2021)*. Islamabad: MoCC. Available at: <https://www.mocc.gov.pk/SiteImage/Policy/NCCP%20Report.pdf>

³¹⁸ Ministry of Climate Change (MoCC), Government of Pakistan. *Pakistan's National Climate Change Policy (2021)*. Islamabad: MoCC. Pg 34. Available at: <https://www.mocc.gov.pk/SiteImage/Policy/NCCP%20Report.pdf>

³¹⁹ Pakistan: National Adaptation Plan 2023. Ministry of Climate Change & Environmental Coordination (MoCC&EC), Government of Pakistan. Available via: <https://mocc.gov.pk/PublicationDetail/ZDg5NjgwMjMtMmVvZC00ODMyLTg1NzctNmQzODFhNTVmMWEz>

increases in disease, including malaria, dengue, and gastroenteritis.³²⁰ Critically, the NAP warns that heat-related deaths will rise under all emissions scenarios and that rising temperatures are projected to reduce labor productivity across the country.³²¹

The NAP includes a dedicated subsection on climate risks to labor and economic productivity, explicitly identifying low-income workers working labor-intensive jobs (including those in manufacturing, such as garment workers) as among the most vulnerable.³²² The plan acknowledges that “excessive workplace heat, exacerbated by climate change, is a well-known occupational health and productivity danger,” capable of causing heat exhaustion, heat stroke, and even death.³²³ It further recognizes that “a worker’s natural protection is to slow down work or limit working hours,” a statement that implicitly challenges production models that assume standard output regardless of environmental conditions.³²⁴

To address these and other vulnerabilities, the NAP outlines five priority initiatives that aim to (1) mainstream climate adaptation across all levels of government, (2) improve land-use regulation, (3) bolster climate-smart municipal services, (4) leverage nature-based solutions, and (5) develop financing instruments to “ensure sustainable revenue streams for green and resilient urbanization.”³²⁵

Karachi Climate Action Plan 2025

The city’s 2025 Climate Action Plan represents an important and proactive approach to managing emerging climate risks. Goals of the plan include improving urban green space in high heat risk areas, providing additional drinking water facilities for vulnerable populations, and increasing access to cooling through the adoption of energy-efficient fans.³²⁶ The plan also includes efforts to reduce

³²⁰ Pakistan: National Adaptation Plan 2023. Page 53. Ministry of Climate Change & Environmental Coordination (MoCC&EC), Government of Pakistan. Available via:

<https://mocc.gov.pk/PublicationDetail/ZDg5NjgwMjMtMWVvZC00ODMyLTg1NzctNmQzODFhNTVmMWEz>

³²¹ Pakistan: National Adaptation Plan 2023. Page 21. Ministry of Climate Change & Environmental Coordination (MoCC&EC), Government of Pakistan. Available via:

<https://mocc.gov.pk/PublicationDetail/ZDg5NjgwMjMtMWVvZC00ODMyLTg1NzctNmQzODFhNTVmMWEz>

³²² Pakistan: National Adaptation Plan 2023. Page 55. Ministry of Climate Change & Environmental Coordination (MoCC&EC), Government of Pakistan. Available via:

<https://mocc.gov.pk/PublicationDetail/ZDg5NjgwMjMtMWVvZC00ODMyLTg1NzctNmQzODFhNTVmMWEz>

³²³ Pakistan: National Adaptation Plan 2023. Page 55. Ministry of Climate Change & Environmental Coordination (MoCC&EC), Government of Pakistan. Available via:

<https://mocc.gov.pk/PublicationDetail/ZDg5NjgwMjMtMWVvZC00ODMyLTg1NzctNmQzODFhNTVmMWEz>

³²⁴ Pakistan: National Adaptation Plan 2023. Page 55. Ministry of Climate Change & Environmental Coordination (MoCC&EC), Government of Pakistan. Available via:

<https://mocc.gov.pk/PublicationDetail/ZDg5NjgwMjMtMWVvZC00ODMyLTg1NzctNmQzODFhNTVmMWEz>

³²⁵ Pakistan: National Adaptation Plan 2023. Page 5. Ministry of Climate Change & Environmental Coordination (MoCC&EC), Government of Pakistan. Available via:

<https://mocc.gov.pk/PublicationDetail/ZDg5NjgwMjMtMWVvZC00ODMyLTg1NzctNmQzODFhNTVmMWEz>

³²⁶ United Nations Development Programme (UNDP). *Karachi Climate Action Plan (KCAP)*. May 13 2025. Available at: https://www.undp.org/sites/g/files/zskgke326/files/2025-05/karachi_climate_action_plan_kcap.pdf

emissions and improve sustainability in the textile sector, though it does not appear that any of these efforts directly relate to the health of textile workers.³²⁷

Heatwave Management Plans

National Heatwave Management Plan

The 2024 Heatwave Guidelines, put forward by the National Disaster Management Authority of Pakistan, projects regions at high risk of future heatwaves, outlines a dissemination plan for the National Emergency Operation Center’s heatwave alert system, and details the relevant roles and responsibilities of various government departments.³²⁸ The plan includes action items and best practices which, for the private sector and local industry, include harnessing natural energy for passive cooling; optimizing window size and orientation for efficiency and cooling; and investing in insulate building materials for improved energy efficiency.³²⁹ The guidelines further call on law enforcement to establish a heat health early warning system and to coordinate with other emergency response agencies to provide medical assistance and “evacuate individuals from dangerous situations.”³³⁰ Though the plan calls for improved education, advanced planning, and for individuals to “take appropriate precautions to stay safe during extreme heat events,” it does not explicitly refer to the health of workers.³³¹

Sindh Heatwave Management Standard Operating Procedures (SOPs) (2025)

The 2025 SOPs, the provincial-level heatwave management plan, are designed and implemented by the Sindh Provincial Disaster Management Authority. Though they are not formally recognized as a statute or law, they do provide administrative directions that make them operational. Though the text explicitly recognizes factory workers and informal, day-wage workers as particularly vulnerable to extreme heat conditions, it appears to only include specific guidance for government agencies to protect outdoor workers.³³²

Karachi Heatwave Management Plan

³²⁷ United Nations Development Programme (UNDP). *Karachi Climate Action Plan (KCAP)*. May 13 2025. Available at: https://www.undp.org/sites/g/files/zskgke326/files/2025-05/karachi_climate_action_plan_kcap.pdf

³²⁸ National Disaster Management Authority (NDMA). (2024). *Heat wave guidelines 2024: Situation analysis, Pakistan* (Version 2024). Accessed via <https://heathealth.info/wp-content/uploads/Zp0ylx4ksogDptXteEYS.pdf>

³²⁹ National Disaster Management Authority (NDMA). (2024). *Heat wave guidelines 2024: Situation analysis, Pakistan* (Version 2024). Accessed via <https://heathealth.info/wp-content/uploads/Zp0ylx4ksogDptXteEYS.pdf>

³³⁰ National Disaster Management Authority (NDMA). (2024). *Heat wave guidelines 2024: Situation analysis, Pakistan* (Version 2024). Accessed via <https://heathealth.info/wp-content/uploads/Zp0ylx4ksogDptXteEYS.pdf>

³³¹ National Disaster Management Authority (NDMA). (2024). *Heat wave guidelines 2024: Situation analysis, Pakistan* (Version 2024). Accessed via <https://heathealth.info/wp-content/uploads/Zp0ylx4ksogDptXteEYS.pdf>

³³² Provincial Disaster Management Authority (PDMA) Sindh / National Disaster Management Authority (NDMA). *Standard Operating Procedures (SOPs) – Heatwave Management, 2025*. Government of Pakistan. Available at: <https://www.ndma.gov.pk/storage/guidelines/March2025/tlhztI9tvzQvvrSjFnj.pdf>

The Karachi Heatwave Management Plan was developed in 2017 following the deadly 2015 heatwave. The plan describes actions to be taken before, during and after extreme heatwaves in the city, outlining strategies that both government and non-government actors can use to reduce heat-related illness and mortality, including by supporting the public with the resources needed to better protect themselves.³³³ Though the plan details the responsibilities of implementation partners to ensure that weather and heat-related health information is delivered in a clear and timely manner, it is only a roadmap and does not include any legally-binding measures.³³⁴

The plan designates the Education and Labour Departments as the responsible actors in charge of conducting “publicity campaigns during high-risk days focusing on specific areas of concern and populations of workers,” and calls on the Medical and Health Department to increase worker outreach in at-risk neighborhoods during a heat alert,” where feasible.³³⁵

Importantly, as part of the plan, it is the responsibility of the Commissioner Office – the province’s main administrative office – to “organize training for employees” and workers on the impacts of heat and “how to protect themselves;” and to advise both “concerned” employees and employers to shift workers’ schedules away from peak heat hours (12:00pm – 5:00pm).³³⁶ Though this second action item appears to only apply to outdoor workers, elsewhere in the text the document suggests that “shifting schedules for indoor workers exposed to waste heat and non air-conditioned environments may also be appropriate.”³³⁷

Weak Implementation of Workplace Safety Laws

Though Pakistan has clear laws and plans in place to protect and promote occupational health and safety, workers explained that workplace conditions rarely align with the requirements outlined by law. Workers regularly lack access to safe

³³³ Commissioner Office Karachi & Climate & Development Knowledge Network (CDKN). *Karachi Heatwave Management Plan: A Guide to Extreme Heat Planning and Response*. Karachi: Commissioner Office Karachi, 2017. Available at: <https://heathealth.info/wp-content/uploads/HeatwaveManagementPlan.pdf>.

³³⁴ Commissioner Office Karachi & Climate & Development Knowledge Network (CDKN). *Karachi Heatwave Management Plan: A Guide to Extreme Heat Planning and Response*. Karachi: Commissioner Office Karachi, 2017. Available at: <https://heathealth.info/wp-content/uploads/HeatwaveManagementPlan.pdf>.

³³⁵ Commissioner Office Karachi & Climate & Development Knowledge Network (CDKN). *Karachi Heatwave Management Plan: A Guide to Extreme Heat Planning and Response*. Karachi: Commissioner Office Karachi, 2017. Available at: <https://heathealth.info/wp-content/uploads/HeatwaveManagementPlan.pdf>.

³³⁶ Commissioner Office Karachi & Climate & Development Knowledge Network (CDKN). *Karachi Heatwave Management Plan: A Guide to Extreme Heat Planning and Response*. Karachi: Commissioner Office Karachi, 2017. Available at: <https://heathealth.info/wp-content/uploads/HeatwaveManagementPlan.pdf>.

³³⁷ Commissioner Office Karachi & Climate & Development Knowledge Network (CDKN). *Karachi Heatwave Management Plan: A Guide to Extreme Heat Planning and Response*. Karachi: Commissioner Office Karachi, 2017. Available at: <https://heathealth.info/wp-content/uploads/HeatwaveManagementPlan.pdf>.

drinking water and ventilation. Workplaces repeatedly fail to meet safe indoor temperature requirements.

Reflecting on the worsening conditions, Mir Zulfiqar Ali, offered a stark assessment:

In Pakistan, we have commitments and protective policies for formal-sector workers, such as garment workers. But in practice, it's not happening... We have a government safety and health policy, but on the ground it is almost never implemented.³³⁸

Though workplaces are required to record indoor temperatures three times per day at minimum, none of the workers interviewed were aware of official temperature monitoring in their factories or mills.³³⁹ As Muhammad Hunain described it:

We do not track temperatures officially [in our workplace], but one of my colleagues sometimes checks on his mobile phone during the peak of hot days. It shows 45°C (113°F) outside. You can imagine how much hotter it becomes inside, where machinery, bodies, and fabric all trap heat.³⁴⁰

For mill workers, who often work as contractors, conditions are often even worse. Ali shared that the rapid expansion of contract labor across the country has further exacerbated these issues:

Contract workers are typically underpaid, lack social security, and often work longer hours without leave. During extreme heat, these vulnerabilities become life-threatening.

Contract workers are the most vulnerable. They have no EOBI [a government benefits program for the elderly], no paid leave, and no health coverage. They are treated as disposable labor.³⁴¹

David Birnbaum, a Strategic Planner in the global garment industry for the World Bank, suggested that these issues might be addressed in part if the government were to put some of the onus on brands. "Because Pakistan enjoys a good relationship with retailers," he said, "it would be a good idea for the Pakistani government to contact the retailers directly and set up some sort of standards or relationship with them."³⁴²

³³⁸ CRI interview with Mir Zulfiqar Ali, Karachi, Pakistan, 26 October 2025.

³³⁹ *Sindh Occupational Safety & Health Rules, 2019*, Rule 8(B), (E) (Sindh).

³⁴⁰ CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025.

³⁴¹ CRI interview with Mir Zulfiqar Ali, Karachi, Pakistan, 26 October 2025.

³⁴² CRI interview with David Birnbaum, 23 November 2025.

VII. Corporate Responsibility and the Role of International Companies and Brands

Climate impacts on labor rights in Pakistan are not only a domestic concern, as globalization has expanded the reach of both business operations and supply chains across borders. This has transformed the issues of worker exploitation and violations of labor rights, too, into transnational issues requiring coordinated and multinational responses.

Climate Rights International interviewed multiple laborers working in factories or mills producing goods for international corporations, including H&M, Inditex (Zara), GAP, MANGO, ASOS, C&A, NA-KD, NEXT, and IKEA, which are collectively valued at hundreds of billions of dollars.³⁴³ The stories told by these workers draw attention to the ways in which corporate practices and consumer demand in high-income countries can exacerbate climate pressures and occupational health and safety risks for workers in developing countries. Climate Rights International contacted each of these brands, as well as others that source from other factories and mills operated by the same companies as those employing the workers identified in this report. Relevant communications are reflected below. All communications are included in the appendix.

International companies and brands play a well-established role in driving environmental harms and labor rights violations across global supply chains. Across the mass-market industry, the entire high-volume, low-cost production model relies on overconsumption and feeds off a well-documented cycle of abuses.³⁴⁴ When international buyers pressure suppliers into unfair agreements using unsustainable purchasing practices, for example, it can push suppliers to engage in “price squeezing” by cutting prices and speeding up production timelines.³⁴⁵ These practices require workers to work harder and faster, often for less pay, and can further “limit the capital that suppliers have available for investment into improved environmental sustainability,” including improved working conditions and workplace

³⁴³ Inditex listed three of the factories relevant to this investigation as active suppliers in OpenSupplyHub in 2018. While supplier information may have changed since then, one interviewee reported that their factory currently produces clothing for Zara, an Inditex-owned brand. This suggests a link between the factories and Inditex’s supply chain, though Climate Rights International was not able to independently verify this claim.

³⁴⁴ Human Rights Watch. “*Paying for a Bus Ticket and Expecting to Fly*”: *How Apparel Brand Purchasing Practices Drive Labor Abuses*. 23 Apr. 2019. <https://www.hrw.org/report/2019/04/24/paying-bus-ticket-and-expecting-fly/how-apparel-brand-purchasing-practices-drive>; “How Can Policy Support Circular Fashion Growth?” *Fashion Sustainability Directory*, <https://fashion.sustainability-directory.com/question/how-can-policy-support-circular-fashion-growth.md>

³⁴⁵ GlobalData. Fashion brands urged to tackle Bangladesh’s low garment sector pay. Yahoo Finance, November 2024: <https://finance.yahoo.com/news/fashion-b>

climate adaptation measures.³⁴⁶ Other common issues relating to purchasing practices, including “inaccurate order forecasting, price pressures, inadequate lead time and disproportionate financial risk and liability for suppliers,” can similarly contribute to increased work intensity, which not only increases the risk from heat, but can also increase the risk of violence and harassment for workers.³⁴⁷

The Fashion Industry and Climate and Sustainability Commitments

According to 2023 data published by the United Nations Environment Programme (UNEP), the fashion industry produces about ten percent of global carbon emissions annually, which is equivalent to more than the emissions from all international flights and maritime shipping combined.³⁴⁸ As the demand for fast and inexpensive fashion continues to grow, greenhouse gas (GHG) emissions from the industry are projected to increase.³⁴⁹ Some estimates suggest fashion emissions may rise by over 50 percent by 2030.³⁵⁰

As the global fashion industry slowly attempts to grapple with the climate crisis, in part by ramping up environmental, social, and governance (ESG) initiatives, glaring gaps remain in corporate climate and sustainability efforts. A recent analysis of 65 fashion brands by the Business and Human Rights Resource Center exposed a serious blind spot: across all corporate climate and ESG planning, not a single company set a target framed around minimizing climate impacts on workers.³⁵¹ Only one company, Inditex, had a standalone climate strategy that mentioned

³⁴⁶ Paying the price for fashion: Securing a living wage for Bangladesh’s garment workers. SwedWatch, Government of Sweden, 2024: <https://swedwatch.org/wp-content/uploads/2024/11/briefsecuring-living-wagesnov-201124.pdf>; Laurel Anderson Hoffner JS. *Turning up the Heat: Exploring Potential Links between Climate Change and Gender-Based Violence and Harassment in the Garment Sector*; 2021. Accessed December 10, 2023. http://www.ilo.org/global/publications/working-papers/WCMS_792246/lang-en/index.htm

³⁴⁷ Laurel Anderson Hoffner JS. *Turning up the Heat: Exploring Potential Links between Climate Change and Gender-Based Violence and Harassment in the Garment Sector*; 2021. Accessed December 10, 2023. http://www.ilo.org/global/publications/working-papers/WCMS_792246/lang-en/index.htm; Some of the text in this paragraph was originally published in: “My Body Is Burning”: Climate Change, Extreme Heat, and Labor Rights in Bangladesh. Climate Rights International. July 21, 2025.

³⁴⁸ Petrie, L. Sustainability and Circularity in the Textile Value Chain: A Global Roadmap, UN Environment Program, 2023: <https://www.oneplanetnetwork.org/sites/default/files/2023-10/Full%20Report%20-%20UNEP%20Sustainability%20and%20Circularity%20in%20the%20Textile%20Value%20Chain%20A%20Global%20Roadmap.pdf>; Fast Fashion and Emissions: What’s the Link? Earth.Org, August 2024: <https://earth.org/fast-fashion-and-emissions-whats-the-link/>

³⁴⁹ Fast Fashion and Emissions: What’s the Link? Earth.Org, August 2024: <https://earth.org/fast-fashion-and-emissions-whats-the-link/>

³⁵⁰ Fast Fashion and Emissions: What’s the Link? Earth.Org, August 2024: <https://earth.org/fast-fashion-and-emissions-whats-the-link/>; Some of the text in this paragraph was originally published in: “My Body Is Burning”: Climate Change, Extreme Heat, and Labor Rights in Bangladesh. Climate Rights International. July 21, 2025.

³⁵¹ Business & Human Rights Resource Centre. *The Missing Thread: Workers Absent from Fashion Companies’ Climate Plans*. June 2025, Business & Human Rights Resource Centre, https://media.business-humanrights.org/media/documents/BHRRC_The_Missing_thread_report_June_2025.pdf

workers.³⁵² The same analysis found that, at the time of the analysis, only four companies had published detailed supply chain guidance about protecting workers from heat stress.³⁵³ Only two of the 65 companies – VF Corporation and Canada Goose – mentioned climate impacts on the livelihoods of supply chain workers.³⁵⁴ No companies mentioned consultations with trade unions in the development of their climate targets.³⁵⁵

Climate Rights International spoke to David Birnbaum, a Strategic Planner for the global garment industry at The World Bank, who points out that there are two issues at play: sustainability and compliance. While sustainability is a motivator, compliance is the ultimate goal. Birnbaum says that the solution can't come from environmental teams alone, emphasizing that these issues will require a coordinated response:

The important thing is that the people who talk to [brand leadership] have got to be garment people. You don't just want the sustainability teams, you want the sourcing people. This is not just some theoretical or ethical thing; this is business. And we need professionals on all sides.³⁵⁶

Birnbaum explained that both retailers and suppliers have a clear stake in the industry's climate risks, and as consumers become increasingly interested in sustainability, addressing these issues should be seen as an investment that will benefit brands, as much as it will workers:

Companies need a way out of this mess. They have to show consumers that they're sustainable. And working with suppliers will give them a way out.³⁵⁷

Integrating Heat Standards into Supply Chain Codes of Conduct

Some international fashion brands have slowly begun to acknowledge their responsibility to confront rising heat risks across global supply chains. Yet among

³⁵² Business & Human Rights Resource Centre. *The Missing Thread: Workers Absent from Fashion Companies' Climate Plans*. June 2025, Business & Human Rights Resource Centre, https://media.business-humanrights.org/media/documents/BHRRRC_The_Missing_thread_report_June_2025.pdf.

³⁵³ Business & Human Rights Resource Centre. *The Missing Thread: Workers Absent from Fashion Companies' Climate Plans*. June 2025, Business & Human Rights Resource Centre, https://media.business-humanrights.org/media/documents/BHRRRC_The_Missing_thread_report_June_2025.pdf;

³⁵⁴ Business & Human Rights Resource Centre. *The Missing Thread: Workers Absent from Fashion Companies' Climate Plans*. June 2025, Business & Human Rights Resource Centre, https://media.business-humanrights.org/media/documents/BHRRRC_The_Missing_thread_report_June_2025.pdf;

³⁵⁵ Business & Human Rights Resource Centre. *The Missing Thread: Workers Absent from Fashion Companies' Climate Plans*. June 2025, Business & Human Rights Resource Centre, https://media.business-humanrights.org/media/documents/BHRRRC_The_Missing_thread_report_June_2025.pdf; Some of the text in this paragraph was originally published in: "My Body Is Burning": Climate Change, Extreme Heat, and Labor Rights in Bangladesh. Climate Rights International. July 21, 2025.

³⁵⁶ CRI interview with David Birnbaum, 23 November 2025, on file with CRI.

³⁵⁷ CRI interview with David Birnbaum, 23 November 2025, on file with CRI.

the companies linked to the hazards and abuses documented in this report, only one – NEXT, one of Britain’s most lucrative retailers, valued at more than USD \$20 billion – currently has formal heat-stress guidance in place for suppliers and responded to Climate Rights International’s request for comment.³⁵⁸

As of November 2024, NEXT has adopted heat-stress guidance for its contracted factories. NEXT told Climate Rights International that it employs dedicated Code of Practice staff in major sourcing hubs, including Pakistan, to check compliance.³⁵⁹ These locally-based staff conduct regular, unannounced audits, an approach that NEXT describes as essential to assessing workplaces under “typical operating conditions.”³⁶⁰ The company says that concerns raised by workers during these audits are incorporated into subsequent oversight.³⁶¹

In the context of the broader fashion industry, NEXT’s guidance is comparatively thorough. It states that workers must have access to cool, clean drinking water and explicitly notes that increased hydration will require more toilet breaks, indicating that workers should “face no reduction in pay” for taking these and other necessary additional breaks in the heat.³⁶² The company also mandates that indoor workplaces be kept within “safe, comfortable, and legal” temperature ranges – though Sindh province does not identify any explicit quantification of temperature in its law.³⁶³ NEXT calls for air conditioning, fans, natural ventilation, or exhaust ventilation systems in factories and importantly recognizes that air movement cools workers only below 36C (98.6F), and can cause additional heat stress beyond that, noting that at these levels, “temperatures need to be reduced before increasing air flow.”³⁶⁴

NEXT maintains that suppliers are contractually bound to these standards, writing in an email to Climate Rights International that they are “non-negotiable.”³⁶⁵ The company also reports partnerships with Cornell University and New York University that aim to study the impacts of extreme heat on worker health, safety, and

³⁵⁸ Prakash, P. “How Next became the U.K.’s most successful clothing retailer with \$1.3 billion in profit — outpacing a struggling industry with its savvy e-commerce play.” *Yahoo Finance*, 27 March 2025. Available via: <https://finance.yahoo.com/news/british-mega-retailer-whose-ceo-123313957.html>

³⁵⁹ NEXT Heat Stress Guidance. November 2024. Accessed 23 November 2025, available via: <https://supplier.next.co.uk/>

³⁶⁰ NEXT Heat Stress Guidance. November 2024. Accessed 23 November 2025, available via: <https://supplier.next.co.uk/>

³⁶¹ NEXT response to Climate Rights International’s request for comment, 20 November 2025, on file with CRI.

³⁶² NEXT Heat Stress Guidance. November 2024. Accessed 23 November 2025, available via: <https://supplier.next.co.uk/>

³⁶³ NEXT Heat Stress Guidance. November 2024. Accessed 23 November 2025, available via: <https://supplier.next.co.uk/>

³⁶⁴ NEXT Heat Stress Guidance. November 2024. Accessed 23 November 2025, available via: <https://supplier.next.co.uk/>

³⁶⁵ NEXT response to Climate Rights International’s request for comment, 20 November 2025, on file with CRI.

productivity, noting that the resulting findings will be incorporated into future heat guidance.³⁶⁶

Still, gaps persist. Despite strong language in some areas, implementation appears inconsistent; and as workers' testimony in this report makes clear, compliance continues to pose a challenge. NEXT's own auditing standards classify "inadequate systemic protection from extreme temperatures" as just a "minor" issue, which appears to qualify for a follow up an entire year later.³⁶⁷

No other brand sourcing from the factories sourcing from the factories or mills examined in this investigation reported current implementation of detailed, heat-specific protection standards in supplier guidelines. However, in response to Climate Rights International's request for comment, H&M indicated that it has developed a health and safety guideline for suppliers that identifies both heat and high humidity as potential workplace hazards, to be launched before the start of next year. But prior correspondence with Climate Rights International shows that H&M recommends "taking local legal limits for maximum temperature for working into account," which Pakistan has yet to establish.³⁶⁸

The Inter IKEA Group (IKEA) stated in its correspondence with Climate Rights International that, "in regions where extreme heat is an issue, such as Pakistan, suppliers are required to consider it in the risk assessments according to the requirement in [IWAY General Section](#) requirement G 7.1."³⁶⁹ IWAY functions as IKEA's internal supplier code of conduct, which IKEA notes is mandatory for all suppliers.³⁷⁰ Notably, however, while IWAY Section 7.1 does refer to ventilation, it doesn't include any specific reference to temperature, safety, or cooling, and IKEA confirmed that, while thermometers are present in production areas, they do not automatically collect temperature data from suppliers.³⁷¹ In addition, no specific remediation measures are identified in the text.³⁷² IKEA also claims that, due to the

³⁶⁶ NEXT response to Climate Rights International's request for comment, 20 November 2025, on file with CRI.

³⁶⁷ NEXT Supplier Auditing Standards. June 2024. Accessed 23 November 2025, available via: <https://supplier.next.co.uk/>; NEXT Factory Ratings and Follow Up Timelines. January 2024. Accessed 23 November 2025, available via: <https://supplier.next.co.uk/>

³⁶⁸ H&M response to Climate Rights International's prior request for comment (regarding initial Bangladesh investigation), on file with Climate Rights International. 4 July 2025.

³⁶⁹ IKEA response to Climate Rights International's request for comment, 25 November 2025, on file with CRI.

³⁷⁰ IKEA response to Climate Rights International's request for comment, 25 November 2025, on file with CRI.

³⁷¹ IWAY (IKEA Code of Conduct), General Section G 7.1: "The working environment is clean, hygienic and well maintained and has adequate light, ventilation and, when necessary, heating."; IKEA. (n.d.). *IWAY Standard – General Section 6.0*. Available via https://www.inter.ikea.com/-/media/interikea/how-we-do-business/how-we-work-with-our-suppliers/iway/general-section/iway-standard-general-section-60_english.pdf?rev=30e74c3bca854e9c8975a731b3faa275&sc_lang=en&hash=3FC30EF64674E1F6AAEBBE5C1279C4C0; IKEA response to Climate Rights International's request for comment, 25 November 2025, on file with CRI.

³⁷² IWAY (IKEA Code of Conduct): "The working environment is clean, hygienic and well maintained and has adequate light, ventilation and, when necessary, heating."; IKEA. (n.d.). *IWAY Standard – General Section 6.0*.

outcomes of a previous internal assessment, IWAY requires all suppliers to provide warning signs about dehydration that include reminders to drink water, though this requirement is not explicitly outlined in the IWAY General Section that outlines “requirements for all suppliers.”³⁷³ IWAY does, however, require that workers trained in first-aid are available during all operating hours and that unlimited, clean water is provided free of charge.³⁷⁴

MANGO’s Code of Conduct for Suppliers and Manufacturers similarly falls short in terms of adequately addressing climate-related risks to workers. Though the code states that, “Lighting, ventilation, noise, temperature and hygiene conditions shall be adequate and actively monitored in all facilities, and access to rest facilities, toilets ensuring privacy and drinking water shall be ensured,” it does not provide any guidance on acceptable workplace temperatures or what steps should be taken when a factory exceeds those limits.³⁷⁵ In correspondence with Climate Rights International, the company wrote, “Regarding temperature data collection, Mango does not currently gather temperature information from supplier factories or mills in Pakistan, neither specifically in other countries.”³⁷⁶ Though MANGO noted that it recognizes safe temperature as a key aspect of workplace health, representatives indicated that they would have to explore the “relevance” of gathering temperature data from suppliers moving forward.

At the time of publication, ASOS, C&A, GAP, NA-KD, and Inditex (Zara) had not responded to Climate Rights International’s requests for comment.³⁷⁷ However,

Available via https://www.inter.ikea.com/-/media/interikea/how-we-do-business/how-we-work-with-our-suppliers/iway/general-section/iway-standard-general-section-60_english.pdf?rev=30e74c3bca854e9c8975a731b3faa275&sc_lang=en&hash=3FC30EF64674E1F6AAEBBE5C1279C4C0

³⁷³ IWAY (IKEA Code of Conduct): “The working environment is clean, hygienic and well maintained and has adequate light, ventilation and, when necessary, heating.”; IKEA. (n.d.). *IWAY Standard – General Section 6.0*.

Available via https://www.inter.ikea.com/-/media/interikea/how-we-do-business/how-we-work-with-our-suppliers/iway/general-section/iway-standard-general-section-60_english.pdf?rev=30e74c3bca854e9c8975a731b3faa275&sc_lang=en&hash=3FC30EF64674E1F6AAEBBE5C1279C4C0

³⁷⁴ IWAY (IKEA Code of Conduct): “The working environment is clean, hygienic and well maintained and has adequate light, ventilation and, when necessary, heating.”; IKEA. (n.d.). *IWAY Standard – General Section 6.0*.

Available via https://www.inter.ikea.com/-/media/interikea/how-we-do-business/how-we-work-with-our-suppliers/iway/general-section/iway-standard-general-section-60_english.pdf?rev=30e74c3bca854e9c8975a731b3faa275&sc_lang=en&hash=3FC30EF64674E1F6AAEBBE5C1279C4C0

³⁷⁵ MANGO. (2024). *Code of Conduct for product suppliers and manufacturers* [PDF]. MANGO Fashion Group. https://www.mangofashiongroup.com/documents/20122/95072/Co%CC%81digo+de+conducta_Mango_2024.pdf/cb2c3a91-b9f9-bd28-61ed-bea855c7663a?t=1733396859626

³⁷⁶ MANGO response to Climate Rights International’s request for comment, 24 November 2025, on file with CRI.

³⁷⁷ Inditex listed three of the factories relevant to this investigation as active suppliers in OpenSupplyHub in 2018, the most recent public data available. While supplier information may have changed since then, one interviewee reported that their factory currently produces clothing for Zara, an Inditex-owned brand. This suggests a link between the factories and Inditex’s supply chain, though Climate Rights International was not able to independently verify this claim.

based on publicly available information, it does not appear any of these brands are taking steps to adequately address the risks posed by extreme heat to workers in their supply chains. While ASOS's Ethical Code of Conduct includes a single bullet point stating that "workers must be protected from extreme temperatures," the document provides no indication of what is considered "extreme" and no actions through which to meet this requirement.³⁷⁸ The supplier codes and relevant guidelines published by the remaining brands – C&A, GAP, NA-KD, and Inditex (Zara) – do not make any reference to excessive heat; and only one, C&A, mentions temperature at all, in connection with a requirement for sufficient heating.³⁷⁹

In addition to contacting the companies directly linked to the factories and mills covered in this investigation, Climate Rights International also wrote to other brands that source from factories in Karachi that are owned or operated by the same suppliers responsible for the facilities where interviewed workers reported severe heat-related impacts and concerns. Among these brands were BESTSELLER, a

³⁷⁸ ASOS plc. (2017). *ASOS Supplier Ethical Code* [PDF]. <https://asos-12954-s3.s3.eu-west-2.amazonaws.com/files/8716/3231/4569/asos-ethical-code-of-conduct-2017.pdf>

³⁷⁹ C&A's Supplier Code of Conduct calls for a "safe and hygienic place to work, with sufficient light, heating and ventilation" and access to potable water. It notes that "workers must be free to refuse tasks or remove themselves from work situations that the worker believes to present an imminent and serious danger to life or health without fear of disciplinary action, discrimination or termination." It does not make reference to excessive heat.; C&A. (2023, March 21). *C&A Code of Conduct* [PDF]. https://www.c-and-a.com/image/upload/v1681742898/corporate/pdf/reporting/suppliers-business-partners/C_A_Code_of_Conduct_March_2023.pdf; GAP's Vendor Code of conduct requires that facilities comply with local law, which does not create explicit temperature thresholds for safety. It requires that facilities "shall ensure that adequate and effective ventilation exists for the comfort of workers and that there is proper circulation of air," provide "clean, functional, and sanitary toilet areas" with "no unreasonable restriction of their use," and provide "sufficient and safe drinking/potable water for all workers." The guidelines do not make reference to indoor temperature.; Gap Inc. (n.d.). *Code of Vendor Conduct* [PDF]. <https://www.gapinc.com/CMSPages/GetAzureFile.aspx?path=~%5Cgapcorporatesite%5Cmedia%5Cimages%5Cvalues%5Csustainability%5Cdocuments%5Cgap-inc-code-of-vendor-conduct.pdf&hash=ccf11a639f50d9b945e663b5062973f1721cb84e418a98c4b9dcccfa5b81c0577>; NA-KD's Supplier Code of Conduct calls for a safe and healthy working environment, citing its Work Environment Policy, which calls for the prevention of "occupational injuries and work-related ill health," as well as "compliance with the appropriate regulations and laws," though it does not outline any particular steps or measures, and does not reference excessive heat or workplace temperature.; NA-KD. *Code of Conduct*. PDF. Available from: <https://www.na-kd.com/siteassets/campaigns/2020/november/nakd-truth/office/policy-documents/nakd-code-of-conduct-final.pdf>; NA-KD. *Work Environment Policy (arbetsmiljopolicy)*. PDF. Available from: <https://www.na-kd.com/siteassets/campaigns/2020/november/nakd-truth/office/policy-documents/arbetsmiljopolicy---na-kd.pdf>; The Inditex Code of Conduct for Manufacturers and Suppliers includes text on "safe and hygienic workplace conditions." The document states that ensuring these conditions will include "ensuring minimum conditions of ... ventilation, hygiene ... safety measures and access to a drinking water supply." And that "workers shall have access to clean toilets facilities and drinking water." It also states that manufacturers and suppliers "shall provide their workers with regular training in the matter of health and safety at work." However, no explicit reference is made to excessive temperature or heat. The text cites International Labour Organization 155 on Occupational Safety and Health, which also does not make explicit reference to excessive temperature or heat.; Inditex. (n.d.). *Code of Conduct for Manufacturers and Suppliers* [PDF]. https://www.inditex.com/itxcomweb/api/media/8cd88d29-0571-43d5-a6c3-a6c34671e4c1/inditex_code_of_conduct_for_manufacturers_and_suppliers.pdf.

multi-billion-dollar Dutch fashion company, and Levi Strauss & Co., a US-based denim and apparel giant – both of which indicated that they maintain heat recommendations for suppliers. While this report does not identify any direct evidence connecting either BESTSELLER or Levi’s to the specific hazards or abuses described, as of 2025, both brands continue to source from other facilities run by these suppliers.

BESTSELLER’s 2024 Extreme Heat Guideline encourages suppliers to protect workers as temperatures rise, calling for regular temperature monitoring, risk assessments, and “effective ventilation systems.”³⁸⁰ It recommends that, during periods of extreme heat, suppliers provide additional hydration options; and encourages the provision of PPE in unusually high temperatures, including water-cooled garments, air-cooled garments, and wetted overgarments.³⁸¹ It also calls for necessary medical care to be provided in cases of heat-related occupational injury.³⁸² Notably, however, the guideline has no clear enforcement mechanisms, and provides only recommendations on heat-protections, many of which exceed local legal requirements.³⁸³ In the context of Pakistan, where weak regulation and enforcement of laws pose challenges to occupational health and safety, and where only no established maximum temperature standards or work-to-rest standards exist, BESTSELLER’s guidance may fall short unless more robust compliance efforts are deployed.

Levi’s Supplier Code of Conduct Implementation Guidebook similarly includes explicit heat protections for factory workers. The company mandates worker participation in hazard assessments, including in the identification of extreme heat risks, and requires physical exams for workers assigned to operations involving extreme heat.³⁸⁴ Factories must maintain “satisfactory temperature controls” and ensure conditions do not “routinely expose workers to excessive heat.” Levi’s also requires worker training on heat-stress symptoms and first aid, with written records to

³⁸⁰ BESTSELLER. *Extreme Heat Guideline for Suppliers – Version 1.0, November 2024*. Available via https://bestseller.com/media/ghsjlaq3/bestseller_extreme-heat-guideline-for-suppliers_v10_nov-2024.pdf

³⁸¹ BESTSELLER. *Extreme Heat Guideline for Suppliers – Version 1.0, November 2024*. Available via https://bestseller.com/media/ghsjlaq3/bestseller_extreme-heat-guideline-for-suppliers_v10_nov-2024.pdf

³⁸² BESTSELLER. *Extreme Heat Guideline for Suppliers – Version 1.0, November 2024*. Available via https://bestseller.com/media/ghsjlaq3/bestseller_extreme-heat-guideline-for-suppliers_v10_nov-2024.pdf

³⁸³ The guideline states that, “For countries, where these recommendations are legal requirements, they must be followed. For recommendations that are not legal requirements, they should nonetheless be considered as guidance and applied when and where relevant.” BESTSELLER. *Extreme Heat Guideline for Suppliers – Version 1.0, November 2024*. Available via https://bestseller.com/media/ghsjlaq3/bestseller_extreme-heat-guideline-for-suppliers_v10_nov-2024.pdf

³⁸⁴ Levi Strauss & Co., *2025 Supplier Code of Conduct Implementation Guidebook* (March 2025). Accessed 23 November 2025, available via: <https://www.levistrauss.com/wp-content/uploads/2025/03/2025-LSCo.-Supplier-Code-of-Conduct-Implementation-Guidebook.pdf>

demonstrate that training has been completed.³⁸⁵ The guidance includes acclimatization protocols both for new workers and those who are returning to work following two weeks off or longer, and quantifies hydration needs, directing suppliers to provide up to one quart of water per worker per hour.³⁸⁶ It also requires “reasonable shifts and rest breaks” tied to work intensity (light, moderate, or heavy) and environmental conditions, though it does not appear to specify threshold temperature or humidity levels.³⁸⁷ The guidebook includes “sample questions that the Program Evaluator may wish to consider when investigating heat stress in the workplace,” outlining indicators on thermometer and temperature control equipment function, water supply, rest breaks, acclimatization, scheduling of work, cool rest areas, training, and heat monitoring.³⁸⁸

Though several additional brands named in this report have provisions in their codes of conduct or broader due diligence programs that require safe and healthy workplaces, these assurances fall short of effectively addressing heat-specific risks. Protecting workers from climate-related risks calls for more than general commitments, and will instead require that brands explicitly identify extreme heat as a workplace risk and outline feasible, concrete, and meaningful remediation responses.

Across the industry, the emergence of heat-related supplier standards is a necessary first step. But to be truly effective, these standards need to move beyond general principles and incorporate actionable, quantifiable targets, including science-backed work-to-rest ratios, stronger enforcement and accountability mechanisms, and real-time monitoring of production floor temperatures, as has been highlighted by researchers at Cornell University’s Global Labor Institute.³⁸⁹ Without these measures, guidelines may appear strong in theory, but fail to protect workers in practice, leaving them to endure unprotected the life-threatening temperatures on factory floors.

³⁸⁵ Levi Strauss & Co., *2025 Supplier Code of Conduct Implementation Guidebook* (March 2025). Accessed 23 November 2025, available via: <https://www.levistrauss.com/wp-content/uploads/2025/03/2025-LSCo.-Supplier-Code-of-Conduct-Implementation-Guidebook.pdf>

³⁸⁶ Levi Strauss & Co., *2025 Supplier Code of Conduct Implementation Guidebook* (March 2025). Accessed 23 November 2025, available via: <https://www.levistrauss.com/wp-content/uploads/2025/03/2025-LSCo.-Supplier-Code-of-Conduct-Implementation-Guidebook.pdf>

³⁸⁷ Levi Strauss & Co., *2025 Supplier Code of Conduct Implementation Guidebook* (March 2025). Accessed 23 November 2025, available via: <https://www.levistrauss.com/wp-content/uploads/2025/03/2025-LSCo.-Supplier-Code-of-Conduct-Implementation-Guidebook.pdf>

³⁸⁸ Levi Strauss & Co., *2025 Supplier Code of Conduct Implementation Guidebook* (March 2025). Accessed 23 November 2025, available via: <https://www.levistrauss.com/wp-content/uploads/2025/03/2025-LSCo.-Supplier-Code-of-Conduct-Implementation-Guidebook.pdf>

³⁸⁹ Judd, Jason, et al. *Hot Air: How Will Fashion Adapt to Accelerating Climate Change?* Cornell University, Global Labor Institute, Dec. 2024. <https://www.ilr.cornell.edu/sites/default/files-d8/2024-12/gli-hot-air-4-december-2024.pdf>.

Flawed Workplace Inspections

Many of the brands named in this report attempt to manage worker safety in part via inspections, buyer's visits, and third-party audit systems. Social audits, or private inspections, and related certifications have taken off in recent years as brands and retailers increasingly face public pressure to ensure that their supply chains are not the source of human rights abuses or environmental harms.³⁹⁰ These types of auditing initiatives essentially create voluntary standards or codes of conduct that are defined either by third parties or brands themselves. According to recent research by Human Rights Watch, although the exact revenue “generated by the social audits and certification industry is difficult to assess, the auditing industry itself estimates it at least at US\$300 million annually.”³⁹¹

Though audits can be an effective way to assess, monitor, and address workplace safety risks, many do not currently assess workplace temperature. MANGO shared with Climate Rights International, for example, that “current social audit standards do not capture climate-related data, such as temperature levels inside factories.”³⁹² MANGO purchases final products only from factories that hold a valid FSLM [Facility Social and Labour Module], BSCI [Amfori's Business Social Compliance Initiative], or SMETA [Sedex Members Ethical Trade Audit] audit, none of which currently collect temperature data.³⁹³

Even where audits do track indoor heat conditions, inspection systems often lack enforcement mechanisms and can be manipulated relatively easily. Researchers in various countries, including across Asia, have repeatedly uncovered deceptive reporting tactics and other efforts intended to hide findings that won't reflect well on companies or suppliers.³⁹⁴ For example, recent research published by Cornell

³⁹⁰ Human Rights Watch. *“Obsessed with Audit Tools, Missing the Goal’: Why Social Audits Can’t Fix Labor Rights Abuses in Global Supply Chains.”* Human Rights Watch, 15 Nov. 2022, [hrw.org/report/2022/11/15/obsessed-audit-tools-missing-goal/why-social-audits-can-t-fix-labor-rights-abuses](https://www.hrw.org/report/2022/11/15/obsessed-audit-tools-missing-goal/why-social-audits-can-t-fix-labor-rights-abuses). Accessed 13 July 2025.

³⁹¹ Human Rights Watch. *“Obsessed with Audit Tools, Missing the Goal’: Why Social Audits Can’t Fix Labor Rights Abuses in Global Supply Chains.”* Human Rights Watch, 15 Nov. 2022, [hrw.org/report/2022/11/15/obsessed-audit-tools-missing-goal/why-social-audits-can-t-fix-labor-rights-abuses](https://www.hrw.org/report/2022/11/15/obsessed-audit-tools-missing-goal/why-social-audits-can-t-fix-labor-rights-abuses). Accessed 13 July 2025. Some of the text in this section was originally published in: “My Body Is Burning”: Climate Change, Extreme Heat, and Labor Rights in Bangladesh. Climate Rights International. July 21, 2025.

³⁹² MANGO response to Climate Rights International's request for comment, 24 November 2025, on file with Climate Rights International.

³⁹³ MANGO response to Climate Rights International's request for comment, 24 November 2025, on file with Climate Rights International.

³⁹⁴ Human Rights Watch. *“Obsessed with Audit Tools, Missing the Goal’: Why Social Audits Can’t Fix Labor Rights Abuses in Global Supply Chains.”* Human Rights Watch, 15 Nov. 2022, [hrw.org/report/2022/11/15/obsessed-audit-tools-missing-goal/why-social-audits-can-t-fix-labor-rights-abuses](https://www.hrw.org/report/2022/11/15/obsessed-audit-tools-missing-goal/why-social-audits-can-t-fix-labor-rights-abuses). Accessed 13 July 2025; Transparentem. *Hidden Harm: Audit Deception in Apparel Supply Chains and the Urgent Case for Reform*. Transparentem, Oct. 2021, <https://transparentem.org/wp-content/uploads/2021/09/Hidden-Harm-Audit-Deception-in-Apparel-Supply-Chains-and-the-Urgent-Case-for-Reform.pdf>. Accessed 13 July 2025; Judd, Jason, Angus Bauer, Sarosh Kuruvilla, and Stephanie Williams. *Fashion's Climate Breakdown and Its Effect for Workers: Report 1*. Global Labor Institute, Cornell University, 19 Sept.

University's Global Labor Institute found that in Vietnam, third-party certifiers typically record early-morning temperatures, when factories tend to be cooler.³⁹⁵ Some observers shared that they had never seen a third-party-reported temperature above the government 32°C (90°F) threshold applied for 'medium' work in apparel production, despite the country's subtropical climate and the extreme heatwaves Vietnam has experienced in recent years.³⁹⁶ In Cambodia, Cornell's research found that some factories operate under warehouse permits as opposed to registering as factories to exploit lower requirements for ventilation measures.³⁹⁷ Other research has found that the broader lack of transparency associated with these types of checks leaves open questions about accuracy, quality, and trust.³⁹⁸

These problems are not confined to climate-specific audits, but are unfortunately representative of a broader pattern in the industry. Climate Rights International's previous investigation in Bangladesh, for example, found that workers often prepare for factory visits and are encouraged to remain quiet or even lie about workplace conditions and abuses. Transparentem, an NGO that conducts investigative research in global labor chains, claims to have uncovered evidence of audit deception at "most worksites included in its disclosed investigations" between 2019 and 2021, including over 20 garment factories across different countries in Asia.³⁹⁹

In the course of Climate Rights International's investigation in Karachi, multiple workers mentioned these flaws in factory inspection procedures, explaining some of the changes and preparations taken in an attempt to mask the reality of their working conditions. Amir Zareef described how this works:

2024.https://www.ilr.cornell.edu/sites/default/files-d8/2024-09/GLI%20Report%201_Rev_9-19-24.pdf. Accessed 29 June 2025.

³⁹⁵ Judd, Jason, Angus Bauer, Sarosh Kuruvilla, and Stephanie Williams. *Fashion's Climate Breakdown and Its Effect for Workers: Report 1*. Global Labor Institute, Cornell University, 19 Sept.

2024.https://www.ilr.cornell.edu/sites/default/files-d8/2024-09/GLI%20Report%201_Rev_9-19-24.pdf. Accessed 29 June 2025.

³⁹⁶ Judd, Jason, Angus Bauer, Sarosh Kuruvilla, and Stephanie Williams. *Fashion's Climate Breakdown and Its Effect for Workers: Report 1*. Global Labor Institute, Cornell University, 19 Sept.

2024.https://www.ilr.cornell.edu/sites/default/files-d8/2024-09/GLI%20Report%201_Rev_9-19-24.pdf. Accessed 29 June 2025.

³⁹⁷ Judd, Jason, Angus Bauer, Sarosh Kuruvilla, and Stephanie Williams. *Fashion's Climate Breakdown and Its Effect for Workers: Report 1*. Global Labor Institute, Cornell University, 19 Sept.

2024.https://www.ilr.cornell.edu/sites/default/files-d8/2024-09/GLI%20Report%201_Rev_9-19-24.pdf. Accessed 29 June 2025.

³⁹⁸ Human Rights Watch. *"Obsessed with Audit Tools, Missing the Goal": Why Social Audits Can't Fix Labor Rights Abuses in Global Supply Chains*. Human Rights Watch, 15 Nov. 2022, [hrw.org/report/2022/11/15/obsessed-audit-tools-missing-goal/why-social-audits-can-t-fix-labor-rights-abuses](https://www.hrw.org/report/2022/11/15/obsessed-audit-tools-missing-goal/why-social-audits-can-t-fix-labor-rights-abuses). Accessed 13 July 2025.

³⁹⁹ Transparentem. *Hidden Harm: Audit Deception in Apparel Supply Chains and the Urgent Case for Reform*. Transparentem, Oct. 2021, <https://transparentem.org/wp-content/uploads/2021/09/Hidden-Harm-Audit-Deception-in-Apparel-Supply-Chains-and-the-Urgent-Case-for-Reform.pdf>. Accessed 13 July 2025.

Workers are notified days in advance. On those days, everything becomes clean: floors, washrooms, even the water coolers.⁴⁰⁰

Samina, too, shared that workers are instructed to prepare in advance for inspection days:

We are asked to clean our tables and follow rules very strictly before the visitors arrive.⁴⁰¹

Both workers said neither they nor their colleagues are included in any discussions with the inspection teams.

Shaista explained that the improved conditions ahead of buyer visits do not last, and do not benefit the workers long-term:

When people from audits come, they clean everything, wash the washrooms, and provide cold water in coolers. Once they are gone, everything disappears.⁴⁰²

Mir Zulfiqar Ali, executive director of the Workers Education and Research Organization in Pakistan, explained that this is a familiar pattern across the country:

On the day of an inspection, whether from a government team or an international buyer, everything suddenly looks perfect. Additional fans are switched on, first-aid kits are displayed, and owners temporarily follow the rules. But once the auditors leave, conditions return to what they were: hot, congested, and unsafe.⁴⁰³

NEXT indicated in its correspondence with Climate Rights International that the company conducts regular, unannounced visits to address this particular issue and observe factories under “typical operating conditions.”⁴⁰⁴ Other companies named in this report appear to have similar standards in place, reserving the right to engage in unscheduled inspections, but without specific temperature standards in place, it’s not clear that these “surprise” visits would adequately address the issues at hand.

For some workers, mill workers in particular, workplace inspections were absent altogether. One of the men interviewed explained that there are no buyer’s

⁴⁰⁰ CRI interview with Amir Zareef, Karachi, Pakistan, 28 October 2025.

⁴⁰¹ CRI interview with Samina, Karachi, Pakistan, 28 October 2025.

⁴⁰² CRI interview with Shaista, Karachi, Pakistan, 26 October 2025.

⁴⁰³ CRI interview with Mir Zulfiqar Ali, Karachi, Pakistan, 26 October 2025.

⁴⁰⁴ NEXT response to CRI’s request for comment, 20 November 2025, on file with CRI.

inspections in his unit. He believed that his workplace was intentionally kept “off the books” as a way to avoid the inspections:

Many of us think running this place separately is a way to avoid buyers’ inspections. If inspectors come to the main factory, they will not see this unit. We feel the company wants to hide the working conditions here.⁴⁰⁵

Government enforcement of labor and health and safety regulations is also falling short. One critical structural issue, according to Ali, is the weakness of Pakistan’s labor inspection system. He noted that the size of the workforce far exceeds the capacity of available inspectors:

Sindh government’s labor department is responsible for monitoring workplaces, but their numbers are extremely low. And in many cases, inspectors are not even allowed to enter factories.⁴⁰⁶

Climate Rights International spoke with Dr. Nausheen Anwar, a Karachi-based urban climate resilience expert at the International Institute for Environment and Development, who echoed Ali’s concerns;

In Pakistan, occupational health and safety regulations were always kept in check through routine inspections. But in the last 20 years or so, inspections have largely fallen off, in large part because of neoliberal reforms and various other political changes across the board. Inspectors are not getting access [to factories and mills] in the ways that they once were, so we don’t actually know what’s happening on shop floors.⁴⁰⁷

Dr. Anwar expressed the view that these issues were not only barriers to legal compliance, but also for third-party auditors and other regulatory bodies.⁴⁰⁸ The only way to address them, she shared, would be to “integrate occupational health and safety plans into polycentric governance structures,” in which “local governance, labor organizations, urban planners, and other various stakeholders, including union councils, cooperate.”⁴⁰⁹

Human Rights Responsibilities of Companies

⁴⁰⁵ CRI interview with Gulzar Ali, Karachi, Pakistan, 26 October 2025

⁴⁰⁶ CRI interview with Mir Zulfiqar Ali, Karachi, Pakistan, 26 October 2025.

⁴⁰⁷ CRI interview with Dr. Nausheen Anwar, Urban Climate Resilience Lead, International Institute for Environment and Development, 24 November 2025, on file with CRI.

⁴⁰⁸ CRI interview with Dr. Nausheen Anwar, Urban Climate Resilience Lead, International Institute for Environment and Development, 24 November 2025, on file with CRI.

⁴⁰⁹ CRI interview with Dr. Nausheen Anwar, Urban Climate Resilience Lead, International Institute for Environment and Development, 24 November 2025, on file with CRI.

As rising temperatures increasingly threaten the health, safety, and livelihoods of workers in Karachi and across Pakistan, companies operating in the country and sourcing from its supply chains have a responsibility to prevent and address human rights harms, including climate-related harms, linked to their business activities.⁴¹⁰

UN Guiding Principles on Business and Human Rights

The UN Guiding Principles on Business and Human Rights (UNGPs), endorsed by the UN Human Rights Council in 2011, established internationally recognized standards for business and state responsibilities related to preventing and addressing human rights abuses linked to business activities.⁴¹¹ The Guiding Principles mandate that businesses avoid causing or contributing to human rights abuses through their activities and “take appropriate steps” to address any adverse impacts that arise. This obligation extends to foreseeable human rights risks linked to climate change, as explicitly indicated by the Working Group on the issue of human rights and transnational corporations and other business enterprises in 2023.⁴¹² Under the framework established by the Guiding Principles, businesses are required to “seek to prevent or mitigate adverse human rights impacts that are directly linked to their operations, products or services by their business relationships.”⁴¹³ This applies even in the instance that they have not contributed to those impacts.⁴¹⁴

To fulfill these responsibilities, companies must implement human rights due diligence processes, which include: “assessing actual and potential impacts and acting upon findings, tracking responses, and communicating how impacts are addressed.” This process must also encompass environmental and climate-related harms, recognizing their direct impact on fundamental rights, such as the right to health and the right to a healthy environment.⁴¹⁵ When a company identifies adverse impacts within its value chain, it should use its “leverage to prevent or mitigate the

⁴¹⁰ Much of the text in this section was originally published in: “My Body Is Burning”: Climate Change, Extreme Heat, and Labor Rights in Bangladesh. Climate Rights International. July 21, 2025.

⁴¹¹ United Nations. *Guiding Principles on Business and Human Rights: Implementing the United Nations “Protect, Respect and Remedy” Framework*. United Nations, 2011, <https://www.ohchr.org/sites/default/files/D>

⁴¹² United Nations Working Group on Business and Human Rights. *Information Note on Climate Change and the Guiding Principles on Business and Human Rights*. United Nations Human Rights Office, June 2023, <https://media.business-humanrights.org/>

⁴¹³ United Nations Human Rights Council. *Guiding Principles on Business and Human Rights: Implementing the United Nations “Protect, Respect and Remedy” Framework*. United Nations, 2011, https://www.ohchr.org/documents/publications/guidingprinciplesbusinessshr_en.pdf

⁴¹⁴ United Nations Human Rights Council. *Guiding Principles on Business and Human Rights: Implementing the United Nations “Protect, Respect and Remedy” Framework*. United Nations, 2011, https://www.ohchr.org/documents/publications/guidingprinciplesbusinessshr_en.pdf

⁴¹⁵ United Nations Working Group on Business and Human Rights. *Information Note on Climate Change and the Guiding Principles on Business and Human Rights*. United Nations Human Rights Office, June 2023, <https://media.business-humanrights.org/m>

adverse impact.”⁴¹⁶ If unable to do so, the company should consider ending the business relationship.

OECD’s Guidelines for Multinational Enterprises

The OECD Guidelines for Multinational Enterprises on Responsible Business Conduct similarly provide standards of practice for responsible business conduct. These guidelines call on enterprises to operate in alignment with internationally agreed upon goals on climate change, including expectations for mitigation as well as adaptation.⁴¹⁷ The guidelines recommend that companies and financial institutions take steps to understand and respond to climate impacts associated with their operations, products, services, and investments.⁴¹⁸

Notably, the guidelines include specific reference to workers’ ability to adapt to climate change, asserting that “enterprises should avoid activities which undermine climate adaptation for, and resilience of, communities, workers and ecosystems.”⁴¹⁹

Though Pakistan is not a member of the OECD, many companies operating inside its borders or sourcing from its supply chains are based in OECD member countries, including the United States, the European Union, the United Kingdom, and Canada.

⁴¹⁶ United Nations. *Guiding Principles on Business and Human Rights: Implementing the United Nations “Protect, Respect and Remedy” Framework*. United Nations, 2011, <https://www.ohchr.org/sites/default/files/>

⁴¹⁷ Organisation for Economic Co-operation and Development (OECD). *OECD Guidelines for Multinational Enterprises on Responsible Business Conduct*. OECD Publishing, 2023. https://www.oecd.org/en/publications/2023/06/oecd-guidelines-for-multinational-enterprises-on-responsible-business-conduct_a0b49990.html

⁴¹⁸ Organisation for Economic Co-operation and Development (OECD). *OECD Guidelines for Multinational Enterprises on Responsible Business Conduct*. OECD Publishing, 2023. https://www.oecd.org/en/publications/2023/06/oecd-guidelines-for-multinational-enterprises-on-responsible-business-conduct_a0b49990.html

⁴¹⁹ Organisation for Economic Co-operation and Development (OECD). *OECD Guidelines for Multinational Enterprises on Responsible Business Conduct*. OECD Publishing, 2023. https://www.oecd.org/en/publications/2023/06/oecd-guidelines-for-multinational-enterprises-on-responsible-business-conduct_a0b49990.html

VIII. International Legal Standards and Accountability

International human rights law obligates the government of Pakistan to protect workers and others within its borders from harm, including foreseeable harms linked to climate change and extreme heat. This includes the obligation to regulate the conduct of private actors, including businesses.⁴²⁰

The Right to Health

The right to health is a fundamental human right that guarantees every person access to the “highest attainable standard of physical and mental health.”⁴²¹ The right to health is protected under both the Universal Declaration of Human Rights (UDHR) as well as Article 12 of the International Covenant on Economic, Social and Cultural Rights (ICESCR), which Pakistan ratified in 2008.⁴²²

State obligations to take steps to promote, protect, and fulfil this right extend to the underlying determinants of health, including safe and healthy working conditions. The realization of this right requires that states take steps to protect those within their jurisdictions from the rights impacts of climate change.

The Committee on Economic, Social, and Cultural Rights recognizes climate change as a “massive threat” to the enjoyment of the right to health and has repeatedly indicated that “failure to prevent foreseeable human rights harm caused by climate change, or a failure to mobilize the maximum available resources in an effort to do so, could constitute a breach of ... obligation.”⁴²³

Equitable promotion of the right to health will be a necessary step toward effective climate adaptation.

The Right to Life

The right to life is protected under both the Universal Declaration of Human Rights (UDHR) and the International Covenant on Civil and Political Rights (ICCPR), which to which Pakistan acceded in 2010.⁴²⁴

⁴²⁰ Much of the text in this section was originally published in: “My Body Is Burning”: Climate Change, Extreme Heat, and Labor Rights in Bangladesh. Climate Rights International. July 21, 2025.

⁴²¹ United Nations. *International Covenant on Economic, Social and Cultural Rights*. 16 Dec. 1966, Office of the High Commissioner for Human Rights, <https://www.ohchr.org/en/instruments-mechanisms/instruments/international-covenant-economic-social-and-cultural-rights>.

⁴²² United Nations Treaty Body Database. Accessed 15 November 2025 via: https://tbinternet.ohchr.org/_layouts/15/TreatyBodyExternal/Treaty.aspx?CountryID=131&Lang=en

⁴²³ United Nations. *Climate Change and the International Covenant on Economic, Social and Cultural Rights: Statement by the Committee on Economic, Social and Cultural Rights*. UN, 31 Oct. 2018, <https://www.ohchr.org/en/statements-and>

⁴²⁴ United Nations Treaty Body Database. Accessed 15 November 2025 via: https://tbinternet.ohchr.org/_layouts/15/TreatyBodyExternal/Treaty.aspx?CountryID=131&Lang=en

Government obligations to respect and ensure the right to life “extend to reasonably foreseeable threats and life-threatening situations that can result in loss of life,” including those related to climate change.⁴²⁵ The UN Human Rights Committee has found that climate change and unsustainable development present some of the “most pressing and serious threats” to the right to life. Ensuring the realization of this right will therefore require that states take measures to preserve the environment and protect against climate harms caused by public and private actors, including businesses.

The Right to a Clean, Healthy, and Sustainable Environment

The International Court of Justice recently found, in a landmark advisory opinion, that all people have the right to a clean, healthy and sustainable environment.⁴²⁶

The opinion confirms what was a growing consensus. In 2022, the UN General Assembly adopted a resolution declaring access to a clean, healthy, and sustainable environment to be a universal human right. The resolution highlighted the way in which a healthy environment is critical to the enjoyment of numerous other human rights.⁴²⁷ Pakistan voted in favor of the resolution and has since explicitly adopted the right to a healthy environment in its domestic Constitution.⁴²⁸

The Right to a Safe and Healthy Working Environment

The right to occupational health and safety is a critical extension of the rights to health, life, and a healthy environment, and is similarly protected under international law. The International Covenant on Economic, Social and Cultural Rights (ICESCR), which Pakistan ratified in 2008, recognizes the right to just and favorable conditions of work.⁴²⁹ The ICESCR indicates that this right applies to “all workers in all settings,” including self-employed workers, migrant workers, and those in the informal sector.⁴³⁰ In order to protect and uphold this right, states are required to adopt

⁴²⁵ United Nations Human Rights Committee. *General Comment No. 36: Article 6 (Right to Life)*. UN, 3 Sept. 2019, <https://www.ohchr.org/en/documents/general-comments/ccpr-general-comment-no-36-article-6-right-life>.

⁴²⁶ International Court of Justice, Advisory Opinion of 23 July 2025, <https://www.icj-cij.org/case/187>, para. 373.

⁴²⁷ UN General Assembly, The human right to a clean, healthy and sustainable environment, A/RES/76/300, adopted July 28, 2022, <https://docs.un.org/en/A/RES/76/300>.

⁴²⁸ United Nations. (2022, July 28). *With 161 votes in favour, 8 abstentions, General Assembly adopts landmark resolution recognizing clean, healthy, sustainable environment as human right (GA/12437)*. UN Press; Associated Press of Pakistan. (n.d.). *UNGA declares access to clean, healthy environment a human right; Pakistan explains its support*. APP. Available via <https://www.app.com.pk/global/unga-declares-access-to-clean-healthy-environment-a-human-right-pakistan-explains-its-support/>; Human Rights Commission of Pakistan. (2025). *The Promise of Article 9A: Bridging constitutional rights and environmental governance*. Lahore: HRCP. Available via <https://hrqp-web.org/hrqpweb/wp-content/uploads/2020/09/2025-The-promise-of-Article-9A.pdf>

⁴²⁹ United Nations Treaty Body Database. Accessed 15 November 2025 via:

https://tbinternet.ohchr.org/_layouts/15/TreatyBodyExternal/Treaty.aspx?CountryID=131&Lang=en

⁴³⁰ United Nations. *International Covenant on Economic, Social and Cultural Rights*. 1966. United Nations Treaty Series, vol. 993, p. 3. Committee on Economic, Social and Cultural Rights. *General Comment No. 23 on the Right to Just and Favourable Conditions of Work*. United Nations, 2016, E/C.12/GC/23.

national policies to minimize hazards in the workplace and require businesses to provide access to safe drinking water and adequate sanitation facilities.⁴³¹

The right to a safe and healthy working environment is further protected by the International Labour Organization under the Declaration of Fundamental Principles and Rights at Work (1988, amended 2022).⁴³² The International Labor Organization is a United Nations agency dedicated to promoting social and economic justice through the advancement of international labor standards and rights. Pakistan has been an active member of the ILO since its conception in 1974 and has ratified eight of the ten fundamental ILO conventions, including the Occupational Safety and Health Convention (1981, No. 155) and the Promotional Framework for Occupational Safety and Health (2006, No. 187), both of which are legally-binding and provide critical protections for workers, including provisions for safe working conditions.⁴³³

The two fundamental conventions not yet ratified by Pakistan are the Freedom of Association and Protection of the Right to Organise Convention (C87) and the Right to Organise and Collective Bargaining Convention (C98), both of which are key to workers' ability to report and address issues, including heat, at work.

Despite having not yet ratified these provisions, ILO member states, including Pakistan, still have an obligation to promote and realize the fundamental right to a safe and healthy working environment, as outlined in the Declaration of Fundamental Principles and Rights at Work (1988, amended 2022). The Declaration “contains the core principles that ILO Member States are called upon to respect by virtue of their membership even if they have not ratified the ILO’s Conventions in which they are expressed.”⁴³⁴

ILO guidelines explicitly address temperature regulation in the non-binding Hygiene Recommendation of 1964 (No. 120), which Pakistan has also not yet agreed to. The Hygiene Recommendation states that “No worker should be required to work regularly in an extreme temperature,” and that relevant authorities should determine

⁴³¹ United Nations General Assembly. *The Human Right to Water and Sanitation: Resolution A/RES/64/292*. United Nations, 28 July 2010, https://www.un.org/en/ga/search/view_doc.asp?symbol=A/RES/64/292; International Labour Organization. *WASH@Work: A Self-Training Handbook*. ILO, 2016, https://www.ilo.org/wcmsp5/groups/public/—ed_dialogue/—sector/documents/publication/wcms_535058.pdf

⁴³² International Labour Organization. *ILO Declaration on Fundamental Principles and Rights at Work*. Adopted June 1998; amended June 2022. International Labour Organization, <https://www.ilo.org/about-ilo/mission-and>

⁴³³ International Labour Organization. (n.d.). *Pakistan* – International Labour Organization. Available via <https://www.ilo.org/regions-and-countries/asia-and-pacific/pakistan>; International Labour Organization. (n.d.). *Country profile: Pakistan* – NORMLEX. Available via https://normlex.ilo.org/dyn/nrmlx_en/f?p=NORMLEXPUB:11200:0::NO::P11200_COUNTRY_ID:103166

⁴³⁴ International Labour Organization. *ILO Declaration on Fundamental Principles and Rights at Work*. Adopted June 1998; amended June 2022. International Labour Organization, <https://www.ilo.org/about-ilo/mission-and-impact-ilo/ilo-declaration-fundamental-principles-and-rights-work>

maximum standards of temperature and provide rooms in which workers may rest to relieve discomfort from the heat.⁴³⁵

Pakistan has also yet to ratify the Medical Care and Sickness Benefits Convention, 1969 (No. 130), or the Protection of Wages Convention, 1949 (No. 95).

⁴³⁵ International Labour Organization. *R120 – Hygiene (Commerce and Offices) Recommendation, 1964 (No. 120)*. 1964. International Labour Organization, https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_INSTRUMENT_ID:312458

IX. Recommendations

Recommendations from Workers

Heat stress policies are too often designed without input from those most exposed to risk. In an effort to challenge that pattern, Climate Rights International asked each worker interviewed as part of this report about the tools and resources they need to better cope with and protect themselves from the heat at work. Their accounts and insights provide a clear and urgent call for change, highlighting both the everyday struggles they face and the straightforward measures that could immediately improve their health and safety at work. In the words of one worker, if heat safety protocols were developed in factories, “our lives would become easier.”⁴³⁶ We hope that these recommendations can be used by policymakers to design heat adaptation standards that meet the needs of workers.

The workers whose perspectives are reflected below emphasized that their recommendations are not abstract demands, but rather simple fixes, if not urgent matters of survival. As one worker phrased it:

We are not asking for luxury, just basic rights. If the heat keeps rising every year, workers like us will suffer the most. We need fans, ventilation, fair wages, job security, and proper medical support. These are basic needs, not demands for comfort.⁴³⁷

Another echoed similar views:

Just give us cool air and clean water. We are not asking for luxury.⁴³⁸

Workers emphasized that their asks were simple. In the words of one man:

Laws exist on paper. Workers want them to be implemented inside the factories.⁴³⁹

Further, they stressed the urgency of reform:

Heat is increasing every year. If factories don't change, workers will suffer more and more.⁴⁴⁰

⁴³⁶ CRI interview with Munawar Siddiqui, Karachi, Pakistan, 25 October 2025.

⁴³⁷ CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025.

⁴³⁸ CRI interview with Sardar Khan, Karachi, Pakistan, 25 October 2025.

⁴³⁹ CRI interview with Abdullah, Karachi, Pakistan, 27 October 2025.

⁴⁴⁰ CRI interview with Muhammad Sagheer, Karachi, Pakistan, 27 October 2025.

Workers called on relevant authorities to take the following actions:

- **Provide clean, cold drinking water for all workers**

All of the workers interviewed for this report expressed concern about their access to hydration at work, and all called for improved access to clean, cool, and safe drinking water moving forward. Many, like Abdullah, expressed this in simple terms: “Give us clean drinking water,” he said. “We deserve clean water.”⁴⁴¹ In addition to safe water, others highlighted the need for access to cold water on the job. Several described hierarchical access to resources at work, with one worker calling on his workplace to provide clean water to all workers: “Give us clean drinking water for everyone, not just the supervisors.”⁴⁴²

- **Provide additional break time for workers to cool down on hot days**

All of the workers in this report described limited breaks and heavily restricted rest time, even in extreme heat conditions. Many asked simply for one or two additional short breaks – just a few extra minutes – throughout the day:

At least give one more short break during peak heat. Our bodies cannot handle this much heat.⁴⁴³

One lunch break is not enough. During the hottest months, even two short breaks of ten minutes each would help us recover.⁴⁴⁴

Even a 10-minute break in the afternoon would help our bodies recover.⁴⁴⁵

Increased break time during extreme hot days ... An additional 10-minute break every two hours during hot weather.⁴⁴⁶

- **Provide on-site medical facilities that are prepared to monitor and manage symptoms of heat stress**

Several of the workers shared that their workplaces lacked the capacity and resources to address heat-related illnesses and emergencies. They stressed that their factories and mills need proper planning and medical support to manage heat-related and other emergencies:

⁴⁴¹ CRI interview with Abdullah, Karachi, Pakistan, 27 October 2025.

⁴⁴² CRI interview with Muhammad Sagheer, Karachi, Pakistan, 27 October 2025.

⁴⁴³ CRI interview with Muhammad Sagheer, Karachi, Pakistan, 27 October 2025.

⁴⁴⁴ CRI interview with Samina, Karachi, Pakistan, 28 October 2025.

⁴⁴⁵ CRI interview with Sardar Khan, Karachi, Pakistan, 25 October 2025.

⁴⁴⁶ CRI interview with Amir Zareef, Karachi, Pakistan, 28 October 2025.

Workers should get medical support. There should be a proper system in emergencies.⁴⁴⁷

We need ... proper medical support.⁴⁴⁸

We need medical facilities.⁴⁴⁹

Others simply recommended providing “first-aid”⁴⁵⁰ or “medical benefits,”⁴⁵¹ while others called for preventative “medical checks.”⁴⁵²

- **Provide cooling equipment and improve ventilation**

Under Sindh province law, workers have a right to ventilation and safe indoor temperatures at work. Workers responded to current conditions by asking for additional ventilation and cooling systems in their factories and mills:

Give us ... proper ventilation. At least install more fans or cooling systems.⁴⁵³

Install more fans, maybe coolers.⁴⁵⁴

Invest in cooling systems, such as AC units or stronger fans.⁴⁵⁵

Install cooling systems or high-power industrial fans.⁴⁵⁶

Fans or cooling systems.⁴⁵⁷

Cooling units or proper ventilation.⁴⁵⁸

Give us cool air.⁴⁵⁹

We need fans, ventilation.⁴⁶⁰

⁴⁴⁷ CRI interview with Sardar Khan, Karachi, Pakistan, 25 October 2025.

⁴⁴⁸ CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025.

⁴⁴⁹ CRI interview with Abdullah, Karachi, Pakistan, 27 October 2025.

⁴⁵⁰ CRI interview with Abdullah, Karachi, Pakistan, 27 October 2025.

⁴⁵¹ CRI interview with Sardar Khan, Karachi, Pakistan, 25 October 2025.

⁴⁵² CRI interview with Muhammad Sagheer, Karachi, Pakistan, 27 October 2025.

⁴⁵³ CRI interview with Abdullah, Karachi, Pakistan, 27 October 2025.

⁴⁵⁴ CRI interview with Muhammad Sagheer, Karachi, Pakistan, 27 October 2025.

⁴⁵⁵ CRI interview with Amir Zareef, Karachi, Pakistan, 28 October 2025.

⁴⁵⁶ CRI interview with Samina, Karachi, Pakistan, 28 October 2025.

⁴⁵⁷ CRI interview with Munawar Siddiqui, Karachi, Pakistan, 25 October 2025.

⁴⁵⁸ CRI interview with Shaista, Karachi, Pakistan, 26 October 2025.

⁴⁵⁹ CRI interview with Sardar Khan, Karachi, Pakistan, 25 October 2025.

⁴⁶⁰ CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025.

- **Provide fair pay**

All of the workers described financial pressures due to low wages, and many said these challenges were made worse in the heat. Some workers asked for “fair overtime,”⁴⁶¹ while others asked for “a salary increase.”⁴⁶²

Others asked for additional means of financial support, with at least one worker suggesting the government should “control prices.”⁴⁶³ Ensuring financial stability will be necessary to create conditions in which workers do not feel compelled to continue to work through dangerous conditions, including extreme temperatures.

- **Improve protections for contract workers**

Contract workers, mostly mill workers, recounted a variety of challenges related to their day-wage work status. Sardar Khan called for textile mill laborers to be shifted from contractual workers to fixed workers, and for salaries to be increased “to at least the minimum wage of 40,000 PKR.”⁴⁶⁴ Another worker expressed similar struggles and needs:

Contractual workers have no rights and are not even considered workers.⁴⁶⁵

Later adding:

If we had medical benefits or gratuity, we would feel some security. Right now, we have nothing.⁴⁶⁶

Hunain asked for “fair wages” and “job security,” stressing that both were basic needs for worker survival.⁴⁶⁷

Climate Rights International’s Recommendations to Key Stakeholders

To the Governments of Pakistan and Sindh Province:

- Strengthen legal protections for occupational health and safety in the context of climate change, including by developing and enforcing national and provincial standards for heat management in the workplace.
 - Mandate work-to-rest ratios based on real-time environmental conditions, stop-work temperature thresholds, and additional flexibility

⁴⁶¹ CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025.

⁴⁶² CRI interview with Shaista, Karachi, Pakistan, 26 October 2025.

⁴⁶³ CRI interview with Munawar Siddiqui, Karachi, Pakistan, 25 October 2025

⁴⁶⁴ CRI interview with Sardar Khan, Karachi, Pakistan, 25 October 2025.

⁴⁶⁵ CRI interview with Muhammad Sagheer, Karachi, Pakistan, 27 October 2025.

⁴⁶⁶ CRI interview with Muhammad Sagheer, Karachi, Pakistan, 27 October 2025.

⁴⁶⁷ CRI interview with Muhammad Hunain, Karachi, Pakistan, 29 October 2025.

for workers to shift working hours to avoid working in peak heat conditions;

- Establish return-to-work protocols following heat-related injury or illness;
 - Ensure access to safe and clean, cool drinking water and toilets;
 - Enforce requirements for hazard-related, include heat-specific, safety training for employers, workers, and health care providers about heat-related illness prevention, early detection, and emergency response; and
 - Enact explicit protections to ensure that workers are not penalized for taking additional breaks for rest or hydration, or other adaptive measures, in hot conditions, and develop and enforce explicit protections against employer retaliation for workers complying with heat standards or reporting unsafe conditions.
 - Improve inspection mechanisms, including by conducting unannounced visits.
- Expand and ensure protections for vulnerable workers, including contract worker, by extending government social security programs to cover these workers.⁴⁶⁸
 - Strengthen labor law enforcement via meaningful penalties for non-compliance.
 - Integrate explicit actions related to the protection of workers into existing national and provincial heatwave management plans.
 - Appoint a Chief Heat Officer to coordinate heat-related policies, worker protections, and compliance efforts across government agencies and with other relevant stakeholders; and ensure worker representation in heat-management and response efforts.
 - Address the financial risks of occupational heat exposure, including by ensuring all workers are paid a living wage, receive paid sick leave in cases of heat-related injury or illness and by expanding the development of and access to climate-specific financial relief programs.
 - Invest in climate-resilient urban infrastructure like green spaces and green roofs,
 - Actively support the recognition of “genuine labour unions, enabling workers to bargain collectively.”⁴⁶⁹

To the International Accord for Worker Health and Safety in the Garment and Textile Industry:

- Explicitly include heat stress as a specific risk in the next iteration of the Pakistan Country-Specific Safety Program agreement.

⁴⁶⁸ CRI interview with Mir Zulfiqar Ali, Karachi, Pakistan, 26 October 2025.

⁴⁶⁹ CRI interview with Mir Zulfiqar Ali, Karachi, Pakistan, 26 October 2025.

- Ensure that heat is treated with the same rigor, attention, and resources given to the Accord's original safety pillars.
- Share publicly the process and protocol through which the Secretariat and Technical Committee is to develop the Protocol on heat stress, including an implementation timeline.
- Incorporate heat stress as a fifth core safety pillar into the broader mandate of the Accord.
- Ensure that protections provided to garment workers under the Accord equally apply to mill workers.
- Recognize heat stress as a specific risk in the Bangladesh Safety Agreement and all future country-specific agreements developed as part of the Accord's expansion plans.

To Employers:

- Adapt workplaces to reduce heat exposure and related risks:
 - Incorporate heat-specific occupational health and safety guidance when it becomes available, as outlined above. In the meantime, immediately:
 - Implement temperature monitoring systems at worksites that incorporate measures of sun exposure, humidity levels, and clothing and/or protective equipment.
 - Implement sustainable, passive cooling measures such as increasing shade, ventilation, and airflow at worksites.
 - Establish science-backed work-to-rest ratios and a maximum temperature threshold for stopping work, with full compensation for affected workers.
 - Ensure unrestricted access to free, clean, and cool drinking water and oral rehydration therapy.
 - Ensure workers are not penalized for taking breaks to engage in adaptive behaviors, such as hydrating or resting, to protect themselves from the heat.
 - Provide unrestricted access to bathrooms and ensure workers are not penalized for taking bathroom breaks.
 - Establish accessible, cooler locations where workers suffering from the heat can recover.
 - Allow for workers to adjust their schedules to avoid working in peak heat conditions whenever possible.
 - Relax any required labor outputs during peak heat hours.
 - Ensure access to medical care for work-related illnesses and injuries and ensure workers have adequate time to recover before returning to work.

- Treat absences due to heat illness as paid sick days, within the allowable limits of the Sindh Factories Law.
- Increase awareness of heat-related risks:
 - Provide mandatory heat stress training for all workers and supervisors, including information about:
 - How to recognize and respond to heat-related illnesses;
 - The importance of acclimatization for new workers;
 - Their legal rights related to occupational health and safety;
 - Reporting requirements for illnesses and injuries, including those that are heat-related.
- Ensure worker representation in heat management efforts:
 - Engage workers in developing heat adaptation plans and regularly consult with workers throughout the implementation process.
 - Implement confidential workplace complaint mechanisms that allow workers to anonymously report heat safety violations without fear of retaliation.

To Global Companies and Brands:

- Strengthen supply chain due diligence:
 - Conduct supply chain due diligence to assess heat-related human rights risks and take necessary action to eliminate them, including for sub-contractors.
 - Include workers in inspection and assessment processes to ensure transparency and accountability.
 - Partner with local labor rights organizations to monitor supplier adherence to protective climate adaptation and occupational health and safety standards and just transition principles.
 - Implement accessible and confidential grievance mechanisms to enable workers to file complaints without fear of retaliation.
 - Engage with non-profit and worker-led organizations dedicated to improving worker health and safety across supply chains.
 - Adopt binding agreements to improve worker health and safety across supply chains, such as the International Accord for Health and Safety in the Textile and Garment Industry, and adopt voluntary heat stress standards.
 - Explicitly incorporate heat-health and safety standards into existing industry agreements, including, for current and future members of the International Accord, all country-specific safety agreements under the Accord.

- Champion sustainability by reducing emissions linked to business operations and by prioritizing the development of climate-resilient infrastructure within supply chains.
- Establish and enforce minimum workplace heat safety standards for all suppliers:
 - Mandate real-time temperature monitoring at all worksites.
 - Establish and implement science-backed work-rest ratios based on real-time environmental conditions, including a threshold for work stoppage during extreme heat.
 - Partner with workers and workers' groups to integrate their perspectives into heat safety standards and champion and improve worker education on these issues, including through heat safety training programs.
 - Consider investing in wearable devices to more closely monitor worker health in hot conditions.
 - Conduct unannounced inspections and/or audits and take other necessary steps to ensure factory visits reflect the realities of everyday working conditions.
- Promote responsible purchasing practices to reduce heat-related risks:
 - Engage in responsible purchasing practices to reduce production pressures that may prevent suppliers from implementing proper safety measures, including those related to heat safety.
 - Create agreements and enforceable contracts that outline the above commitments.
- Ensure financial support for workers:
 - Ensure workers are paid a fair and living wage.
 - Ensure that wage structures do not effectively force workers to work excessive and/or unpaid overtime and/or in dangerously hot conditions.
 - Develop emergency financial assistance programs to offset lost wages when extreme heat prevents safe work.

To Consumers:

- Conduct your own due diligence research and, where possible, spend money only with brands that uphold your values and protect and promote human rights, including those related to climate change.
- Shop only in moderation and actively consider the longevity of and the labor required to produce the products you buy.

To Foreign Governments and Multilateral Institutions:

- Strengthen legal frameworks for corporate accountability.
 - Champion and enforce mandatory supply chain due diligence laws that require the assessment and mitigation of climate-related risks and hold multinational corporations accountable for labor conditions across their supply chains.
 - Protect workers from extreme heat through legally binding occupational health and safety standards.
 - Require and enforce fair wages and ethical labor practices to prevent economic pressures that force workers to work in dangerous conditions.

- Include conditions relating to climate adaptation and labor rights in new and existing trade agreements.
 - Coordinate trade policies in alignment with international labor standards, including key ILO conventions relevant to occupational health and safety.

- Increase climate financing from high-income countries to support heat adaptation in developing countries.
 - Provide financial backing to support the implementation of heat-adaptation efforts in low- and middle-income countries, including Pakistan, as agreed to in the Paris Agreement.
 - Advance multi-country funding initiatives to expand global access to sustainable cooling and support and expand research on and implementation of heat-resilient workplace interventions across industries.

- Take steps to regulate environmentally irresponsible industries.
 - Consider developing and enforcing regulations to increase regulation of detrimental industries, as is being done in France, where a recent bill is set to ban advertising and increase disclosures in the ultra fast-fashion industry.

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Appendix I: Communication with Companies and Local Authorities

Letters to local authorities:

- [Environmental Protection Agency \(EPA\)](#)
- [Industries and Commerce Department](#)
- [Karachi Chamber of Commerce and Industry](#)
- [Karachi Metropolitan Corporation](#)
- [Ministry of Labor and Human Resources Department](#)
- [Provincial Disaster Management Authority \(PDMA\)](#)
- [Sindh Building Control Authority \(SBCA\)](#)
- [Sindh Health Department](#)
- [Sindh Human Rights Commission](#)

Letters to companies:

- [ASOS](#)
- [Bestseller](#)
- [C&A](#)
- [Gap](#)
- [H&M](#)
- [IKEA](#)
- [Inditex](#)
- [JC Penny](#)
- [Levis](#)
- [Mango](#)
- [NA-KD](#)
- [Next](#)

Responses:

- [Bestseller](#)
- [H&M](#)
- [IKEA](#)
- [Levis](#)
- [Mango](#)
- [Next](#)

Cover photo: Denim manufacturing industry, Pakistan. Credit: danishkhan/ istock.