

Heat Stress and Workers' Protection in Egypt



Climate Justice Starts with Workers' Protection

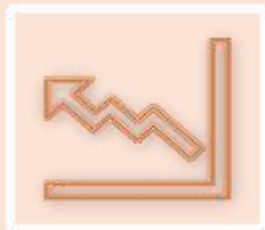
Executive Summary

This paper examines the impact of increasing heatwaves linked to climate change on workers in Egypt, analysing heat stress as one of the most significant emerging challenges to occupational health and safety standards, as well as to the concept of 'decent work'. It reviews the reality of heat exposure in the Egyptian labour market, focusing on vulnerable sectors such as agriculture, construction, renewable energy and municipal services. It also discusses the health, economic and social impacts of heat stress on workers and their families.

It assesses the extent to which Egypt's legislative and regulatory framework addresses these risks by reviewing constitutional and legislative provisions, as well as workplace regulations, including Ministerial Decree No. 211 of 2003, issued by the Minister of Manpower and Immigration. It also analyses the system's adequacy in light of the increasing frequency of heatwaves resulting from climate change. The paper concludes that, while the existing framework provides a preliminary basis for protection, it needs to be updated and developed to keep pace with current climate challenges. This is particularly pertinent with regard to managing heat stress risks, updating exposure standards, and strengthening prevention, monitoring, and response mechanisms.

The paper reviews international experiences in managing heat stress risks in the workplace, highlighting the importance of linking work organisation to early warning systems, risk assessment, and the development of prevention measures tailored to different sectors.

It proposes legislative and regulatory reforms, such as updating the regulatory framework to protect workers from heat stress, establishing a national system to monitor heat-related injuries and deaths, and strengthening occupational health and safety measures. It also suggests integrating worker protection into climate change adaptation and just transition policies to ensure a safer and more equitable work environment, especially for the most vulnerable groups.



I- The Scale of the Problem in Egypt

Rather than being a temporary seasonal hazard, heat stress has become a growing occupational hazard directly linked to the right to safe and decent work. It reveals a gap between escalating climate risks and the capacity of the occupational safety and health system to prevent, monitor and respond to them.

Introduction:

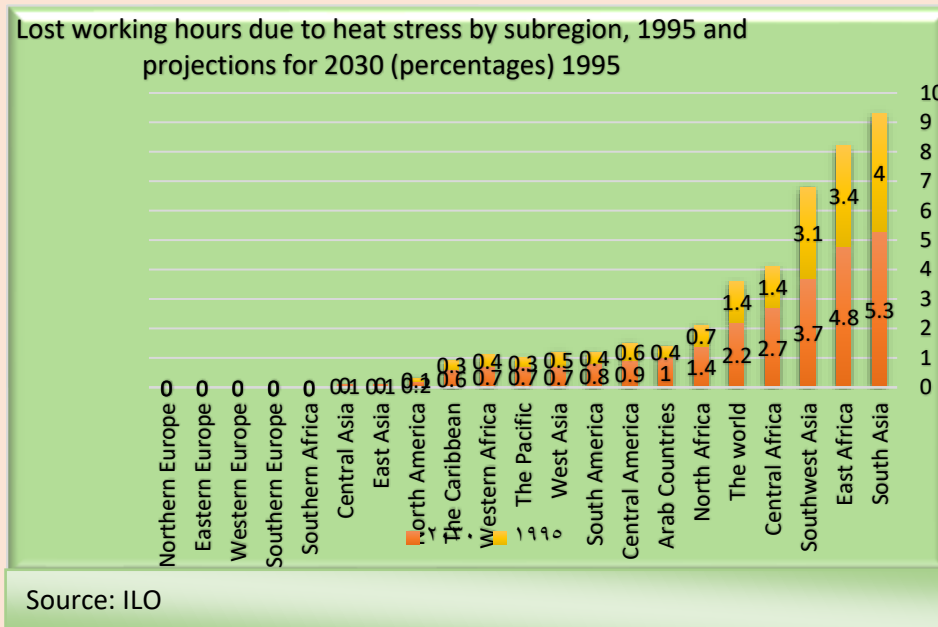
In recent years, Egypt has experienced a marked rise in temperatures and an increase in the frequency, duration and intensity of heatwaves. This is occurring within the broader context of accelerating climate change, whose effects on public health, the economy and the labour market are becoming increasingly evident. High temperatures are no longer a temporary seasonal phenomenon. Instead, they pose an increasing risk to workers' ability to perform their jobs safely, particularly those working outdoors, in physically demanding jobs, or in poorly ventilated or cooled work environments.

Heat stress is one of the most significant occupational hazards associated with climate change. It results from exposure to high temperatures, particularly when combined with physical exertion, high humidity, poor ventilation and a lack of water and rest breaks. The effects can range from mild symptoms such as heat stress and heat exhaustion to more serious conditions like dehydration and impaired consciousness, and even life-threatening heatstroke. The consequences of heat stress extend beyond health and safety to include reduced work capacity and productivity, and an increased likelihood of workplace accidents and injuries.

The International Labor Organization (ILO) has warned of the growing impact of heat stress on the world of work¹, noting the potential loss of working hours and reduced productivity, particularly in regions and economies where temperatures are high and manual labour, agriculture and outdoor activities are prevalent. Therefore, heat stress is not just a health or environmental issue, but also a labour and policy issue that is directly related to the right to safe and decent work, as well as the capacity for social protection. Social protection, safety, and occupational

¹ Working on A Warmer Planet: The Impact of Heat Stress on Productivity and Decent Work, International Labour Organization, 2019. Available at: https://www.ilo.org/sites/default/files/wcmsp5/groups/public/%40dgreports/%40dcomm/%40publ/documents/publication/wcms_711919.pdf

health systems must adapt to evolving climate risks. In Egypt, this issue is particularly important given the climate, the prevalence of outdoor work, the reliance of many sectors on labour requiring direct physical exertion, and the growth of activities in construction, infrastructure,



energy, agriculture, and services.

Workers who do not have regular access to sufficient water, adequate rest breaks, ventilation or protective equipment, or who work long

hours during the hottest part of the day, are at greater risk of heat-related illness.

Although Egypt's legislative and regulatory framework includes general rules for protecting workers from workplace hazards, along with certain provisions governing exposure to heat — including Decree No. 211 of 2003 on safety limits and requirements for a safe work environment — rapid climate change raises questions about the framework's adequacy and ability to address heat stress risks. The challenge lies not only in the adoption of protective regulations, but also in how frequently they are updated, how clear their application criteria are, how effective inspection and monitoring mechanisms are, and how well they address changes in heat exposure levels and link preventive measures to actual climatic conditions. Meanwhile, the gap between the regulatory framework and the reality of the risks is widening due to limited available data on heat stress-related injuries and deaths, the difficulty of accurately quantifying the scale of the phenomenon and the need to develop clearer mechanisms for monitoring, documenting and analysing these cases. Without systematic and categorised data, it is difficult to assess the magnitude of the risks, identify the most vulnerable sectors and groups, and develop evidence-based preventive policies.

These challenges are exacerbated for irregular and seasonal workers, and for those employed in sectors with high levels of heat exposure. Such sectors include agriculture, construction and certain infrastructure and service jobs, as well as work in open-air settings. Heat-related risks often coincide with other factors, such as long working hours, intense physical exertion, limited access to regular rest breaks and insufficient protective measures. This means that protection against heat stress is part of a broader issue concerning working conditions and how well the occupational safety and health system can support the most vulnerable groups.

The issue takes on an additional dimension as changes to the urban environment continue. These include urban sprawl, the decline of green spaces and the emergence of heat island effects in some areas, as well as the expansion of infrastructure and energy projects. This means that protecting workers from heat stress must be more clearly integrated into climate change adaptation policies and the discussion on a just transition. This will ensure that workers do not bear the health and social costs of climate and economic transformations alone.

Based on this, the aim of this paper is to evaluate the effectiveness of Egypt's legislative, regulatory and institutional framework in addressing the risks of heat stress. The paper will analyse the discrepancies between regulations and policies and their actual implementation, while identifying priorities for developing the prevention and protection system. It presents legislative, operational and policy proposals to transition from a seasonal, piecemeal approach to heat-related risks towards an integrated system based on prevention, monitoring and continuous assessment. The paper links protection from heat stress to climate adaptation and just transition policies, thereby strengthening the right to safe and decent work and protecting workers' health and lives in the face of accelerating climate change.



1. The Impact of Heat Stress on Workers in Egypt

Heat stress begins with symptoms that may seem minor, but can progress to life-threatening heatstroke. These risks are exacerbated by physical exertion, high humidity, long working hours and a lack of water, rest and ventilation.

Heat stress occurs when the body is unable to maintain its thermal balance due to prolonged exposure to high temperatures or physical exertion in a hot environment. This impairs the body's ability to cool itself through sweating and other thermoregulatory mechanisms. Initial symptoms include dizziness, fatigue, thirst and dehydration, and muscle cramps. These may progress to fainting or heatstroke, which is a life-threatening medical emergency. The risk of heat stress increases in conditions such as high humidity, intense physical exertion, insufficient drinking water, long working hours and a lack of shade or adequate ventilation — conditions that are common in many outdoor workplaces.

According to estimates by the ILO,² heat stress results in approximately 22.85 million occupational injuries and around 19,000 deaths each year worldwide. Those at greatest risk are workers in poorly ventilated indoor environments and those in outdoor sectors such as agriculture, delivery services, construction and extractive industries.

In the absence of social protection, heat-related illnesses or injuries can lead to temporary or permanent loss of income, high medical costs, and an increased risk of poverty. In the most severe cases, permanent disability or death can deprive families of their main breadwinner. The organization also estimates that about 71% of the global workforce—more than 2.4 billion workers—are exposed to excessive heat while on the job, making heat stress one of the fastest-growing occupational hazards driven by climate change.

² Addressing the Impacts of Extreme Heat through Social Protection, International Labour Organization, 2026. Available at: https://www.ilo.org/resource/article/addressing-impacts-extreme-heat-through-social-protection?utm_source=chatgpt.com



2. Heat waves in Egypt:

Heat waves in Egypt are transforming from a climatic phenomenon to an occupational hazard, particularly for those working outdoors. While some governorates have begun to implement local measures, a national framework linking labour regulations to heat hazard levels and early warning systems is still needed.

From a Climate Phenomenon to an Occupational Hazard:

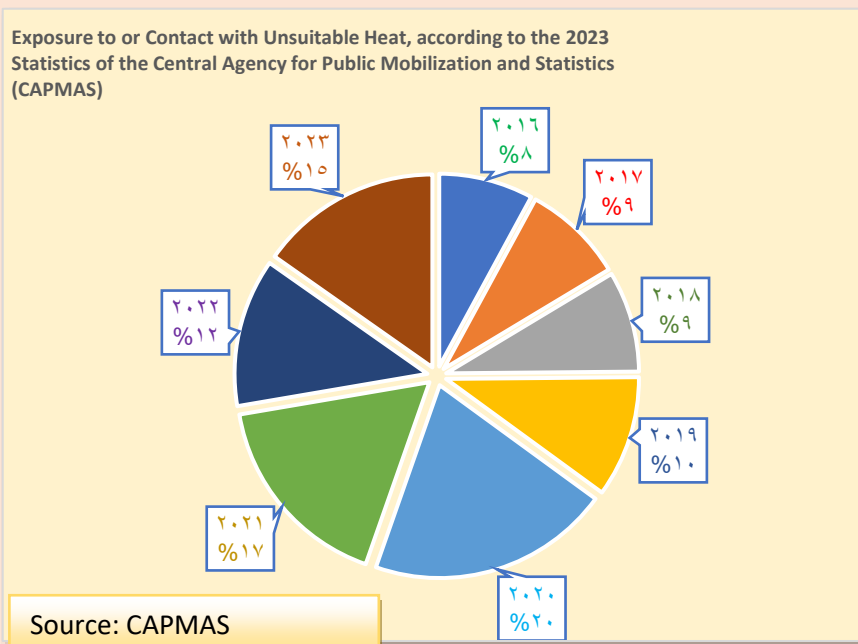
Reports³ issued by the Intergovernmental Panel on Climate Change indicate that the Middle East and North Africa are among the regions that are most vulnerable to extreme heat, desertification and water stress.

Egypt's temperature crisis is evident in several phenomena that have become more prevalent in recent years, including record-breaking summer temperatures, particularly in the southern governorates. In response, the Luxor Governorate has made a local decision in May 2026 reflecting a growing awareness of the risks of heat stress: street cleaners will not work during the hottest hours of the day (11 a.m. to 5 p.m.) until mid-September 2026. This decision aims to ensure their safety amid escalating heat waves. This decision could serve as a model for nationwide adaptation measures encompassing all sectors exposed to high temperatures.

— The effects of high temperatures are not limited to heat exhaustion or heatstroke; they also increase the risk of accidents and injuries in the workplace. According to the Central Agency for Public Mobilization and Statistics (CAPMAS), the rate of injuries resulting from exposure to or contact with inappropriate temperatures increased by 2.7 per cent in 2023 compared to the previous year.⁴ Although this indicator does not specifically measure cases of heat stress, it reflects the growing heat-related risks in Egyptian workplaces, particularly in light of the rising temperatures and frequent severe heatwaves in recent years.

³ The Middle East and North Africa: A Climate Change Hotspot, International Organization for Migration. Available at: <https://mena.iom.int/stories/middle-east-and-north-africa-climate-change-hotspot>

⁴ Work Related Injury Statistics, CAPMAS. (Arabic Source). Available at: <https://www.capmas.gov.eg/data/mainSubject/2/subSubject/25/data-visualization/713>



At the same time, these data reveal a shortcoming in official monitoring systems, as heat-related illnesses are categorized under general classifications such as “exposure to or contact with unsuitable heat,” without a separate category

for work-related heat stress, heat exhaustion, or heatstroke. This makes it difficult to gauge the true scale of the problem and limits the ability of policymakers, researchers, and labor unions to track the evolution of the phenomenon and develop effective preventive measures.

National statistics reflect only part of the reality, as a large proportion of workers most exposed to heat belong to the irregular and informal labor force which amount to - according to the Central Agency for Public Mobilization and Statistics’ annual labor force survey - 28.5% of the total workforce in 2024.⁵ The injuries and deaths of these groups do not always appear in official databases, which suggests that there is a gap between the reported figures and the actual number of heat-related illnesses in the Egyptian labor market.

⁵ Labour Force Survey of 2024, The Central Agency for Public Mobilization and Statistics, 2026. (Arabic Source) Available at: <https://www.capmas.gov.eg/data/mainSubject/2/subSubject/25/data-visualization/1193>



3. Heat Stress in Egypt:

Between Official Statistics and the Invisible Reality

Despite growing international concern about the risks of work-related heat stress, heat exhaustion and heatstroke in the context of climate change, official statistics in Egypt do not include a separate category for these conditions. Consequently, the available data do not accurately reflect the scale of occupational injuries caused by heat exposure, which limits the ability to track the evolution of this phenomenon and assess its impact on the labour market.

Without this classification, it is difficult to accurately count injuries and deaths linked to extreme heat. This, in turn, affects policymakers' ability to design preventive measures based on reliable data. This issue is particularly acute in sectors that rely on informal or seasonal labour, such as agriculture, construction and some renewable energy projects, where many injuries are not recorded or are classified incorrectly, obscuring any link to heat exposure.

This is due to several factors: First, heat stress is not recognized as a distinct category of work-related injury or illness. Second, standardized reporting and documentation procedures are lacking. Third, it is difficult to prove a causal link between heat exposure and injury or death. Fourth, informal workers are not adequately covered by official statistics.

Furthermore, evidence from the field—including cases of fainting and deaths that have occurred at some outdoor work sites during heatwaves—suggests that official figures may only reflect a fraction of the true situation. Inadequate documentation and reporting mechanisms result in the phenomenon being underestimated in official records, highlighting the need to establish a national system for monitoring and documenting occupational injuries and illnesses related to heat stress. This would provide an accurate database to support policy development and enhance workers' protection amid the growing risks posed by climate change.

Case Study:**Death of a Worker at a Solar Energy Project in Aswan During a Severe Heat Wave**

Incidents of extreme heat exposure reveal the real dangers workers face at open-air job sites. One of the most striking examples is the death of worker Ahmed Abdel-Maqsoud (25) in May 2026 while working on a solar energy project in the village of Al-Raqaba in Aswan Governorate for a subcontracting company⁶.

The incident occurred under extreme weather conditions, with temperatures reaching approximately 48 °C in the shade, while seven other workers fainted during the hottest hours of the day. The incident's impact was not limited to health concerns; it also prompted workers to organize a protest at the project site, demanding a halt to work during the hottest hours of the day, the provision of adequate drinking water and a fully equipped medical clinic, and improvements to occupational safety and health measures and wages. This incident cannot be viewed as an isolated event; rather, it reveals a pattern of risks faced by workers in open-air workplaces during heat waves, particularly in sectors that rely on irregular labor or subcontractors, and in the absence of binding national regulations for heat risk management. It also highlights several issues related to heat stress in Egypt, including the continuation of work during periods of extreme heat, inadequate preventive measures, the precarious status of workers employed through subcontractors, and the absence of binding regulations specifying when work must be suspended or reorganized to protect workers from the risks associated with extreme heat.

⁶ After the death of a worker from heat stress... Protest by solar energy project workers in "Al-Raqaba," Aswan, Moataz Haggag, Mada Masr, 21 May 2026 (Arabic Source). Available at: <https://www.madamasr.com/2026/05/21/news/%D8%B3%D9%8A%D8%A7%D8%B3%D8%A9/%D8%A8%D8%B9%D8%AF-%D9%88%D9%81%D8%A7%D8%A9-%D8%B9%D8%A7%D9%85%D9%84-%D8%A8%D8%A7%D9%84%D8%A5%D8%AC%D9%87%D8%A7%D8%AF-%D8%A7%D9%84%D8%AD%D8%B1%D8%A7%D8%B1%D9%8A-%D9%88%D9%82%D9%81%D8%A9-%D8%A7%D8%AD/>



Benban Solar Energy Project in Aswan is Selected as the WBG's Best Project in the World

This accident particularly significant because it occurred at the Benban Solar Park in Aswan. In 2018, the Park won the World Bank Award for the

world's best project thanks to its status as a unique and pioneering model of public–private partnership for clean energy production⁷. The incident raises questions about the extent to which projects aimed at transitioning to a low-carbon economy adhere to decent work, safety and occupational health standards. A just transition should be measured not only by a project's ability to reduce emissions, but also by its ability to provide safe working conditions that protect workers from climate-related risks.

This shortcoming reveals that the challenge extends beyond rising temperatures to the limited capacity of legislative and statistical systems to monitor occupational impacts. Therefore, recognizing heat stress as an independent occupational hazard and incorporating it into systems for work-related injuries and official statistics is essential for developing effective policies to protect workers in the face of climate change.

⁷ Benban Solar Park wins WBG's best project award, Daily News Egypt, 21 March 2019. Available at: <https://www.dailynewsegypt.com/2019/03/21/benban-solar-park-wins-wbgs-best-project-award/>

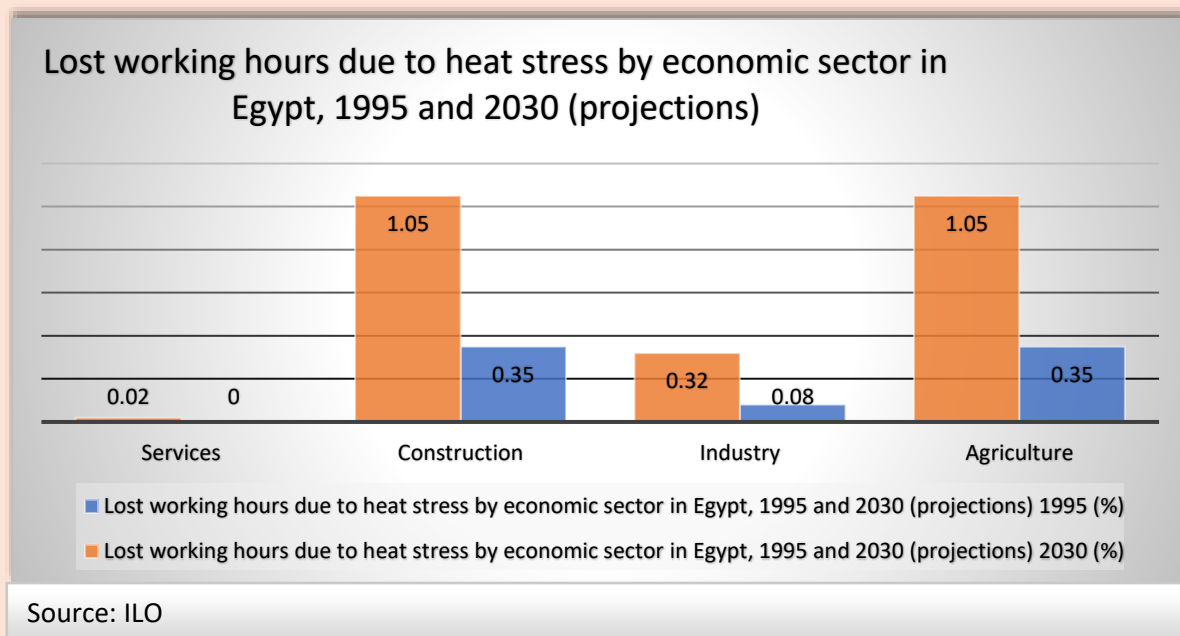


II- The Economic and Social Impacts on Workers in Egypt

It is not only workers who bear the cost of heat stress. Lost work hours and productivity result in lost income, and these effects are exacerbated for daily and irregular workers. This makes extreme heat a new factor in deepening economic and social vulnerability.

The ILO report estimates that economic losses associated with heat stress will worsen in the coming decades, even if global efforts succeed in limiting global warming to 1.5°C above pre-industrial levels.

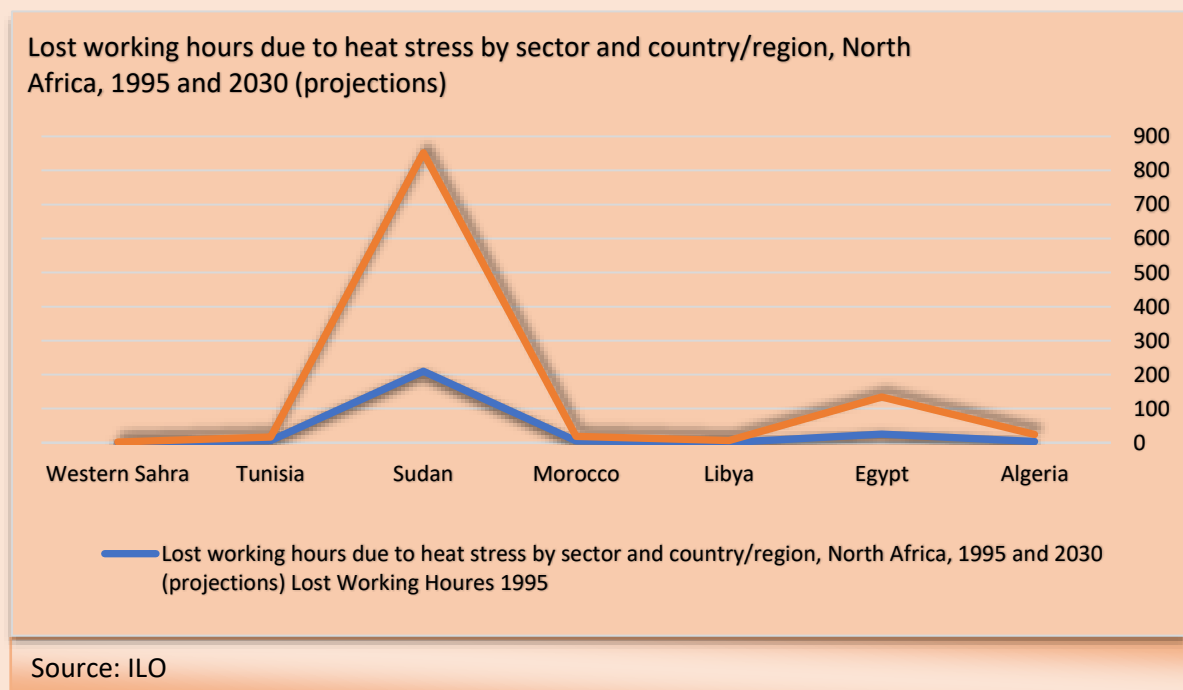
It is projected that, by 2030, more than 2 per cent of the world's total working hours will be lost each year due to high temperatures making work difficult or forcing workers to slow down. In South Asia and West Africa, the resulting loss of productivity could reach 5 percent. Unfortunately, heat stress is often accompanied by other challenges, as it tends to be more prevalent in countries with inadequate working conditions, such as a lack of social protection, high rates of informal employment and working poverty. Extreme heat exacerbates inequalities between rich and poor countries, as well as between different population groups within the same country.



The effects of heat stress are not just limited to the health and safety of workers; they also pose an increasing threat to productivity and economic activity. Rising temperatures reduce workers' ability to perform their duties, particularly during the hottest hours of the day. This leads to

a slowdown in production, as well as an increase in rest periods and work stoppages, especially in sectors that rely on manual labour and in open-air work sites. Heat stress also increases the likelihood of work-related injuries and occupational accidents due to exhaustion, dehydration and impaired concentration. This results in higher costs for treatment, healthcare and compensation.

At the same time, adapting to these conditions places additional burdens on governments and employers. This includes providing cooling and shading, adjusting work schedules and strengthening occupational health and safety services at work sites. The impact of these losses is not limited to economic enterprises, but also affects workers and their families. The most severe impact is felt by informal and seasonal workers who rely on daily wages, as reduced or suspended working hours during heatwaves lead to a direct decline in income and exacerbate the economic vulnerability of low-income families. Consequently, heat stress represents a growing economic and social challenge whose effects extend beyond the individual to encompass the labour market and the national economy as a whole.



Egypt is considered one of the countries vulnerable to these risks. Estimates from the ILO indicate that heat stress will result in the loss of approximately 0.24% of total working hours by 2030 — equivalent to around 134,000 full-time jobs — with the greatest impact concentrated in the agriculture, industry, construction and services sectors. This is

particularly pertinent given the prevalence of informal employment and the fact that many households rely on daily income, meaning that the loss of working hours due to extreme heat affects workers, their families and the national economy alike.⁸

Despite the existence of international estimates indicating the expected losses in the Egyptian labour market, Egypt still lacks an official, published, and updated database that directly tracks work-related injuries, occupational diseases, and productivity losses associated with heat stress. This limits the ability to accurately measure the scale of the problem, undermining the design of evidence-based preventive policies and the evaluation of the effectiveness of government and employer interventions in protecting workers.

⁸ Previous Report in footnote 1.

III- Does the Current Policy Provide Adequate Protection for Workers?

Policy Assessment

Although the Egyptian regulatory framework includes general rules and specific requirements regarding heat exposure, the outdated nature of the standards, inadequate monitoring and inspection, and the lack of comprehensive heatwave protocols mean that there is a gap between the existence of the legal framework and its ability to provide effective protection.

Gaps

Achieved

The Egyptian legislative framework provides a general basis for protecting workers from workplace hazards. This is achieved through constitutional provisions that recognise the right to a safe and healthy work environment, as well as through the provisions of the Labour Code and the regulations and decrees governing occupational safety and health. These provisions require employers to take the necessary measures to prevent workplace hazards. However, the increasing risk of heat stress, particularly at outdoor work sites, raises questions about the adequacy of these regulations and their ability to keep pace with changing climatic conditions.

Decree No. 211 of 2003, issued by the Minister of Manpower and Immigration, is one of the regulatory frameworks relating to heat exposure in the workplace. The decree set out requirements and precautions to prevent occupational hazards, including rules regarding heat exposure and rest periods based on temperature and workload. This demonstrates that protecting workers from heat-related hazards is not a new issue in Egyptian policy, but rather builds upon existing regulatory frameworks.

However, more than two decades have passed since these regulations were issued, coupled with changes in temperature patterns and an increase in heatwaves. This raises questions about the suitability of existing standards for current conditions and the need to periodically review and update them. There is also a need to strengthen the mechanisms for their implementation and monitoring of compliance. This gap is evident at several levels:

First, existing regulations regarding heat exposure standards and work and rest periods need to be periodically reviewed, so that they are based

on the latest scientific knowledge. This means taking into account not only air temperature, but also factors that determine the actual heat stress experienced by workers. These factors include humidity, the intensity of physical exertion, clothing type, ventilation and direct exposure to sunlight.

Second, effective protection does not depend solely on the existence of regulations. Rather, it requires clear mechanisms for their implementation and monitoring. The mere existence of heat stress prevention requirements does not guarantee compliance in all workplaces, particularly in sectors that rely heavily on outdoor work or daily, seasonal and irregular labour. Monitoring is more difficult in these sectors, and workers' ability to stop working or object to hazardous conditions is weakened.

Third, there is no integrated system for monitoring cases of heat stress and related injuries and deaths. Such a system would enable us to determine the scale of the problem, identify the sectors and groups most at risk, and assess the effectiveness of preventive interventions. Effective protection requires data that enables the government, employers and labour unions to transition from responding to individual cases to managing risk based on information and evidence.

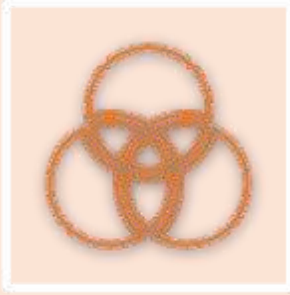
The greatest challenge, consequently, lies in updating heat exposure standards, strengthening inspection and monitoring mechanisms, establishing clear protocols for dealing with extreme heatwaves, linking protective measures to meteorological data and warnings, developing a system for monitoring and reporting heat-related illnesses and ensuring that protection extends to the most vulnerable groups in the labour market.

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Summary of the Evaluation of the Current Policy

Therefore, developing policies requires not only creating new regulations, but also reviewing existing standards and procedures, strengthening prevention and inspection mechanisms, improving monitoring and reporting systems, developing tools for assessing heat stress-related risks and integrating worker protection measures with climate change adaptation policies.

Accordingly, an assessment of the current framework highlights the need to transition from a predominantly regulatory and seasonal approach to heat stress, to an integrated heat risk management system. This system would be based on prevention, monitoring and continuous assessment. It would keep pace with accelerating climate change and transform the right to safe work from a general legal obligation into effective and sustainable protection for workers.



IV. International Comparison:

International practices are shifting from waiting for heat-related illnesses to occur to proactively managing heat risk. This involves implementing early warning systems, assessing the heat burden, regulating working hours and rest periods, ensuring access to water, shade and ventilation, and establishing clear responsibilities for employers, regulatory authorities and worker representatives.

How do Countries Address the Risks of Heat Stress in the Workplace?

International experience shows that the approach to addressing heat stress in the workplace is shifting towards managing risks before they occur, rather than responding to illnesses or emergencies after they occur. This involves combining heat risk assessment, early warning systems, regulation of working hours, provision of rest breaks, water shade and ventilation, and definition of clear responsibilities for employers, regulatory authorities and workers' representatives.

There is no single approach to addressing heat-related risks. While some countries prohibit outdoor work during certain periods or hours, others link work regulations to actual heat risk levels or weather alerts. Still others focus on requiring employers to assess heat exposure risks and take preventive measures that are appropriate for the nature of the work and level of exposure. Some approaches offer more integrated models that link meteorology, public health, labour and local authorities within national or local plans to address heatwaves.

The significance of these experiences for Egypt lies not in their potential to be replicated exactly as they are, but rather in the fact that they offer a set of tools and policies that can be adapted to the Egyptian context. What is needed is not to replicate a specific law or procedure, but rather to identify the elements that can help bridge existing gaps—especially in the areas of early warning, measuring heat burden, organizing work during heatwaves, risk assessment, inspection, and involving workers in preventive measures.

From this perspective, this paper reviews four different case studies:

- India's development of integrated plans to address heatwaves and its reliance on early warning systems;
- The United Arab Emirates' regulation of work during the hottest hours of the day;

- France's integration of heat risks into occupational risk assessments;
- South Africa's development of more detailed implementation regulations for managing heat stress.

These diverse cases enable a comparison of the various tools to be made and those that may be most suitable for developing an Egyptian policy to protect workers from heat-related risks to be identified.

India:

India was one of the first countries to adopt an institutional approach to addressing the risks of heat stress, implementing Heat Action Plans since 2014. These plans rely on coordination between meteorological agencies, local authorities, the health sector and employers to mitigate the health and economic impacts of heatwaves. They include the establishment of early warning systems, adjustments to working hours in sectors most vulnerable to heat, and awareness campaigns for workers, employers and the public on the risks of heat stress and how to prevent it. They also enhance the readiness of health facilities to respond to heat-related emergencies.⁹

The Indian experience highlights the importance of adopting a multisectoral approach to managing heat risk, based on coordination among relevant stakeholders and reliance on early warnings and preventive planning. This approach could be used to develop a comprehensive national policy to protect Egyptian workers in the context of an increasing frequency of heatwaves linked to climate change.

United Arab Emirates:

Since 2005, the United Arab Emirates has implemented a 'midday work ban' to protect workers from the risks of heat stress during the summer. This prohibits the employment of workers in outdoor jobs under direct sunlight during the hottest hours of the day, typically from mid-June to mid-September. It also requires employers to provide shaded areas, adequate drinking water and first-aid supplies, among other things. The Ministry of Human Resources and Emiratisation also conducts regular

⁹ Addressing heat-related health risks in urban India: Ahmedabad's Heat Action Plan, Climate and Development Knowledge Network, May 2014. Available at: <https://www.nrdc.org/sites/default/files/ahmedabad-cdkn-inside-story.pdf>

inspection campaigns to monitor compliance with regulations, imposing penalties and fines on establishments that violate it.¹⁰

This experience highlights the importance of clear, binding regulations for managing heat-related risks in the workplace. These regulations could inform the development of Egyptian policies and legislation to protect workers in the context of increasing heat waves linked to climate change. The experience could be applied in the governorates most vulnerable to heat, such as Aswan, Luxor, Qena and Suhag, through the adjustment of working hours in accordance with weather conditions.

France:

Although the French labour law does not specify a mandatory maximum temperature limit for workplaces, France follows an approach based on heat risk assessment within the occupational safety and health framework. The French National Research and Safety Institute (INRS) states that the risk of heat stress increases when the ambient temperature exceeds 30°C for office work or jobs involving minimal physical exertion and 28°C for jobs requiring physical exertion. Consequently, employers are required to assess the risks of heat exposure and take appropriate preventive measures, such as adjusting work schedules, providing water and rest areas, and improving ventilation. They must also involve employee representatives and occupational safety and health committees in monitoring the implementation of these measures and mitigating risks.¹¹

The French model emphasises the need to move beyond general occupational health and safety regulations and adopt a system based on heat risk assessment. This system would require employers to take preventive measures that are proportionate to the level of risk, which is an approach still lacking in Egypt's regulatory framework. The model

¹⁰ Tomorrow: Implementation of the Worker Protection Policy Against "Heat Stress" Begins, Al-Etihad, UAE, 14 June 2026. (Arabic Source) Available at:

<https://www.aleetihad.ae/news/%D8%A7%D9%84%D8%A5%D9%85%D8%A7%D8%B1%D8%A7%D8%AA/4672311/%D8%BA%D8%AF%D8%A7---%D8%A8%D8%AF%D8%A1-%D8%AA%D8%B7%D8%A8%D9%8A%D9%82-%D8%B3%D9%8A%D8%A7%D8%B3%D8%A9-%D8%AD%D9%85%D8%A7%D9%8A%D8%A9-%D8%A7%D9%84%D8%B9%D9%85%D8%A7%D9%84%D8%A9-%D9%85%D9%86--%D8%A7%D9%84%D8%A5%D8%AC%D9%87%D8%A7%D8%AF-%D8%A7%D9%84%D8%AD%D8%B1%D8%A7%D8%B1%D9%8A>

¹¹ European Countries Work Regulations in Heat Conditions, Reuters, 24 June 2026. Available at:

<https://www.reuters.com/business/environment/european-countries-work-regulations-heat-conditions-2026-06-24/>

also empowers labour unions and safety committees to play a stronger role in managing heat-related risks in the workplace.

South Africa:

South Africa is one of the African countries that has developed a regulatory framework for managing heat stress risks in work environments, particularly in the mining sector. The scope of protection has been expanded to include various other workplaces. Since 2022, the Department of Mineral Resources and Energy has required mining companies to develop mandatory codes of practice for thermal stress management (Anexx 10).¹² These codes address heat stress and include measuring heat exposure levels, linking the results of these measurements to workers' medical follow-up and implementing preventive measures when risk levels are exceeded. In March 2025, the government also issued regulations on physical agents under the Occupational Safety and Health Act,¹³ which included provisions on heat stress, requiring employers to conduct heat exposure risk assessments and adopt appropriate work and rest schedules. They were also required to provide safe drinking water, heat acclimatisation programmes and first aid, and to review preventive measures whenever exposure exceeded established occupational limits.

This experience highlights the importance of moving beyond general principles of occupational safety and health and establishing clear rules for managing heat risks in the workplace.

¹² Mine Health and Safety Resources, South Africa. <https://www.dmpr.gov.za/Services/Mine-Health-and-Safety/Mine-Health-and-Safety-Resources>

¹³ Occupational Health and Safety Act, 1993 (Act No. 85 Of 1993), Physical Agents Regulations, 2024, Department of Employment and Labour, South Africa, 6 March 2025. Available at: https://www.gov.za/sites/default/files/gcis_document/202503/52226gon5952.pdf

Comparison Table:

The State	Key Measures	How Egypt Can Benefit?
UAE	A ban on working during midday hours, with inspections and penalties	Suspension of work during peak hours in the hottest regions
Spain	Adjustments or suspensions of work during Severe weather alerts	Linking labor regulations to weather alerts
France	Including heat-related risks in occupational risk assessments	Requiring workplaces to conduct periodic heat stress risk assessments
India	National and local plans to address heat waves and link them to early warning systems	Integrating the Meteorological Service, the Ministry of Labor, and the states into a national plan to protect workers
South Africa	Adoption of mandatory codes of practice for heat stress management in the mining sector; and regulations on physical factors were issued, incorporating heat stress as a workplace hazard	Explicitly include heat stress in occupational safety and health regulations, and require employers to conduct periodic risk assessments and develop heat-specific prevention plans, including established intervention thresholds and clear procedures to protect workers



V. Heat stress: Between Social Justice and Climate Justice

The risk of heat is not distributed evenly. Those who are most at risk are often least able to stop working or demand protection. Therefore, protecting workers from heat stress is a matter of climate justice, as well as an occupational health and safety measure.

The risk of heat stress is not evenly distributed among workers. Those most exposed to heat are often outdoor workers or those in high-temperature environments. They have limited ability to control their working conditions or take adequate breaks. Some also work under precarious employment arrangements or rely on daily wages. Therefore, exposure to heat is influenced not only by climatic conditions, but also by a worker's position within the labour market and the extent of their social and legal protections.

From this perspective, heat stress is a matter of social justice, as those most at risk are often least able to withstand its consequences. A worker who relies on daily wages may feel forced to continue working despite rising temperatures because stopping work means losing part of their income. Additionally, irregular and seasonal workers, as well as contract workers, may be less able to demand preventive measures or refuse hazardous working conditions than workers in more stable positions.

The effects of heat exposure extend beyond the worker to their family, income and economic stability. Injury or illness resulting from heat stress can lead to lost workdays, reduced work capacity or medical expenses. The consequences can be even more severe in cases of serious injury or death. Therefore, climate-related risks can exacerbate economic and social inequality among workers.

This issue is becoming increasingly important as climate change makes heatwaves more intense, frequent and prolonged. Workers face traditional occupational hazards, which can be addressed through standard safety measures, as well as hazards whose scope and nature are changing as climatic conditions shift. Therefore, protecting workers from heat stress must be incorporated into climate change adaptation policies rather than remaining confined to the occupational safety and health framework as a separate issue.

This is where the concept of climate justice comes into play: adaptation to climate change should not only protect infrastructure and maintain

production continuity, but also ensure the protection of those bearing the heaviest burden of its impacts. In the context of the labour market, this means that the cost of adapting to rising temperatures should not be primarily passed on to workers in the form of increased exposure, loss of income or acceptance of more hazardous working conditions.

This issue is particularly evident in sectors that rely on outdoor work, such as agriculture, construction, municipal services, and certain energy, transportation, and service industries, where the ability to work is directly linked to the weather. There is also an increasing need for policies that target the most vulnerable workers, whose ability to adapt may be limited due to low income, weak social protection, or job insecurity.

Therefore, protecting workers from heat stress is important for occupational safety and health, social justice and climate justice. A fair policy not only reduces health risks in the workplace, but also ensures that climate change does not exacerbate existing inequalities in the labour market.

This requires the integration of worker protection into climate adaptation policies, as well as the linking of heatwave response plans to social protection and decent work policies. The most vulnerable groups and sectors must be prioritised. Workers and their labour unions must also be involved in the dialogue on adaptation policies, as they are among the groups most directly affected by climate-related risks in the workplace.

Consequently, the success of measures to address heat stress should not be only measured by the number of measures employers take to reduce workers' exposure to heat, but also by the extent to which these measures fairly distribute the burdens of climate adaptation, protect the most vulnerable groups and ensure that workers do not bear the cost of climate change alone.



VI. Recommendations:

Rather than requiring a separate system, an effective response requires the development and integration of existing tools, such as updating regulations, monitoring and early-warning systems, risk assessments, inspections, regulation of working hours, and the integration of worker protection into adaptation and just transition policies.

What Steps Should Be Taken?

This paper proposes a set of measures that can be implemented in phased stages, based on an analysis of the reality of heat stress in the workplace, a review of the existing regulatory framework, and the gaps related to prevention, monitoring, and enforcement. Rather than establishing an entirely new system, these recommendations aim to develop existing tools and integrate them into a more comprehensive framework capable of responding to the escalating risks of heat and climate change.

❖ First; Short-Term Measures (Within One Year)

1. Updating the Regulatory Framework for Protection against Heat Stress and Strengthen Its Enforcement Mechanisms

Current regulations governing heat exposure need to be regularly reviewed to ensure that they are suitable for current climatic conditions. This is particularly important for Decision No. 211 of 2003, so that protection standards are based on the latest scientific knowledge and take into account the nature of the work, the level of exertion, and the environmental conditions surrounding the worker.

In this context, the paper recommends the following:

- Review and update the regulations and requirements governing heat exposure to align with climate change and the increasing frequency of heatwaves.
- Issue a simplified procedural guide for employers and workers that clarifies measures to prevent heat stress and manage its symptoms.
- Standardise official awareness messages regarding heat-related risks and preventive measures during periods of high temperatures.
- Intensify inspection campaigns targeting sectors and workplaces most vulnerable to heat-related risks.

- Include compliance with heat stress prevention measures among the priorities for inspections during the hot season.

Potential responsible entities: The Ministry of Labour, inspection agencies and occupational safety and health authorities.

2 — Establishing an early warning system to identify heat-related risks in the workplace

Measures to protect workers should not be based solely on air temperature, but rather on an assessment of the actual level of risk to which a worker is exposed due to interaction between temperature, humidity, physical exertion intensity, direct sun exposure, ventilation and other factors affecting heat load.

This paper proposes the development of a coordination mechanism between:

- the Meteorological Authority;
- The Ministry of Labour;
- Local authorities; and
- Agencies responsible for occupational safety and health.

This mechanism would enable the issuance of alerts during periods of extreme heat, including:

- The expected risk level.
- The most vulnerable regions and sectors.
- The most vulnerable groups.
- Preventive measures that should be taken in the workplace.

It could then be developed further to become part of a broader early warning system for work-related climate risks.

❖ Second: Medium-Term Measures

1. Incorporating occupational heat indexes into labour regulations

Egyptian policy needs to develop tools for measuring heat-related risks that are not based solely on general temperature readings, but rather on indexes that are better suited to measuring the actual heat stress to which workers are exposed.

In this context, this paper recommends:

- Exploring the possibility of adopting the Wet Bulb Globe Temperature (WBGT) index or other scientific indicators that are appropriate to the nature of work and the Egyptian environment.
- Developing guideline tables that link risk levels to the required preventive measures.
- Training labour inspectors and occupational safety and health officials on the use of heat indices and how to interpret their results.
- Incorporating heat risk assessment into occupational risk assessment processes at the most vulnerable work sites.

This would represent a change in approach, moving from a general assessment of heat to an evaluation of the specific risks faced by workers in the workplace.

2. Establish a national database of heat-related injuries and illnesses

Lack of data is one of the most significant obstacles to developing an effective policy to address heat stress. Therefore, Egypt needs a systematic mechanism to monitor and record cases related to occupational heat exposure.

This mechanism should allow for the recording and analysis of:

- Work-related cases of heat stress
- Cases of heatstroke associated with occupational exposure
- Serious injuries and deaths related to heat
- The most vulnerable sectors and regions
- The nature of the work, level of exertion and circumstances in which the injury occurred.

The purpose of this database is not only to produce statistics, but also to use them to identify sources of risk, guide inspections and resource allocation, evaluate the effectiveness of preventive interventions and develop evidence-based policies.

3. Expanding protection to include informal and seasonal workers

Despite their high exposure to outdoor work, physical exertion and unstable working conditions, informal and seasonal workers face greater challenges in accessing preventive and protective measures.

Therefore, this paper makes the following recommendations:

- Developing awareness programmes targeted at informal and seasonal workers;
- Including heat stress prevention measures in employment programmes for temporary and seasonal workers;
- Incorporating occupational safety and health requirements into contracting agreements and major government projects.
- Strengthening the capacity of relevant authorities to access informal, mobile and open-air workplaces.
- Ensuring that access to protection from heat-related hazards is not contingent solely on the type of contract.

❖ Third: Long-Term Measures

1. Integrating Heat-Related Risks into Climate Adaptation and Just Transition Policies

Heat stress should not be confined to the framework of occupational health and safety. Instead, it must be recognised as a direct impact of climate change on work, productivity and health.

This requires the protection of workers from heat-related risks to be integrated into:

- Climate change adaptation plans and strategies
- Economic and sectoral development policies
- Plans for cities and industrial zones
- Labour management policies in sectors most vulnerable to climate risks
- Just transition strategies in sectors affected by climate change.

Climate adaptation cannot be sustainable if it shifts the bulk of the costs of climate change onto workers at the expense of their health and safety.

In the long term, Egypt needs to develop a comprehensive national framework for managing occupational heat-related risks, combining

regulatory standards, prevention, monitoring, early warning systems, inspections, training and social dialogue.

This framework should clearly define:

- Standards for assessing heat-related risks in the workplace.
- The responsibilities of employers and regulatory authorities.
- Operational procedures during extreme heat waves.
- Early warning and response mechanisms.
- Rules for reporting heat-related injuries and incidents.
- Roles of unions and workers' representatives in prevention and monitoring.
- Mechanisms for periodically reviewing and updating the policy in light of data and climate changes.

The goal is to recognize heat stress as an ongoing occupational hazard requiring institutional and systematic management, rather than a seasonal or circumstantial hazard. This will ensure the protection of workers' health and safety, while maintaining production continuity and the ability to adapt to climate change.



Priority of Implementation

The paper argues that the success of these recommendations hinges not only on enacting new regulations, but also on establishing an integrated system linking legislation, prevention, early warning systems, inspections, data collection, raising awareness, and workers' participation. Therefore, action should begin with developing the most urgent and feasible tools—chief among them updating protection standards, strengthening inspections, and establishing an early warning mechanism—then gradually move towards developing a national system for monitoring and managing heat-related risks.

Workers' protection must be the primary criterion for evaluating the effectiveness of climate policy at all stages of implementation, to ensure that climate change does not result in deteriorating working conditions, lost work hours, or an increased risk of injury or illness for workers.

Summary of the Assessment

The paper reveals that heat stress has become an overlapping occupational and climate hazard, and that the main gap lies not only in the lack of regulations, but also in weak monitoring, enforcement, and prevention. Effective protection requires linking labor, climate, and occupational health policies within a comprehensive national response.

These findings reveal that the primary challenge lies not only in the existence of a legislative framework and regulatory rules, but also in the adequacy of this framework and its implementation, and in its ability to keep pace with the constantly changing nature of heat-related risks.