

Climate change and occupational safety and health







Recent ILO Publications on OSH and Climate Change





"A new report from the International Labour Organization being released today, warns that over 70% of the global workforce—2.4 billion people—are now at high risk of extreme heat" -António Guterres Secretary-General of the United Nations







Climate change and occupational safety and health

- Climate change has created a 'cocktail of hazards' for the world's workers e.g. excessive heat, air pollution, UV radiation and extreme weather events.
- Higher daily temperatures, and more frequent and severe heatwaves, are now affecting workers in all regions of the globe.
- Workers are among those most exposed to temperature extremes, yet frequently have no choice but to continue working despite the huge risks.
- The intensification of excessive heat undermines the resilience of economies and the potential for decent work on a global scale.
- While climate-related mitigation efforts will necessitate concerted action over time, workers are being injured and dying now.
- There is an urgent need for **new, evidence-based and comprehensive measures** to protect the health and lives of all workers, in all sectors, and in all regions of the world.

Excessive heat

Every year, at least

2.41 billion workers exposed

22 million occupational non-fatal injuries

2.09 million disability-adjusted life years (DALYs)

18,970 work-related deaths

Every year, **1.6 billion** workers exposed

Solar UV radiations

18,960

work-related deaths due to nonmelanoma skin cancer alone

Vector-borne diseases

Every year, over 15,170 work-related deaths



Every year,



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1.6 billion workers at risk of exposure

860,000 work-related deaths

Agrochemicals



^{Over} 300,000 deaths

Extreme



weather events

Wildfires

Flooding

Major industrial accidents

Health impacts include

Heat stroke Accidents

Cardiovascular disease Malaria Dengue

Lyme disease

Respiratory diseases Cancers

among many others



Globally 2.41 billion workers

70 per cent of the working population are exposed to excessive heat

This results in 22.85

million nonfatal injuries

and 18,970

deaths annually

Regions with the highest workforce exposure to excessive heat:



the Pacific % 74.7% of the workforce

Regions with the **highest proportion** of occupational injuries attributable to excessive heat:

%



Africa 7.2% of all % injuries



The Americas 6.7% of all occupational injuries

Region with the most rapidly increasing workforce exposure to excessive heat since 2000:



Europe and **Central Asia** 17.3% increase

Regions with the most rapidly increasing heat-related occupational injuries since 2000:



The Americas 33.3% increase



Europe and Central Asia 16.4% increase





The impacts on OSH are unevenly distributed across regions and sectors

Workers particularly at risk:

- Outdoor workers in occupations that involve > Workers in physically demanding work in the sun during the hottest hours of the day e.g. agricultural and construction workers
- Those exposed to heat radiation from the ground or machinery e.g. foundry workers and welders
- Indoor workers in environments with **limited ventilation** or air conditioning.
- Occupations where clothing/PPE is necessary.

- occupations e.g. agricultural workers, soldiers and firefighters.
- Migrant and informal workers.
- **Women** and pregnant workers.
- Older adult workers.
- Workers with disabilities.



How excessive heat impacts the safety and health of workers

Mild effects	
Heat fatigue	Heat cramp
Heat rash	Heat oedema
Heat syncope	
Heat exhaustic	on
Serious effe	cts
Heatstroke	—
Fluid/electroly	te disorders/
Acute/chronic	kidney injury
Cardiovascular	r/respiratory diseases



Other climate change hazards (UV radiation, air pollution etc)

Chemicals in the workplace

Mental health effects

Psychological distress

Anxiety

Irritation & anger

Reduced focus & concentration

Accidents and injuries

Altered emotional states

Hot surfaces and ill-functioning equipment

Unsafe use of PPE





US\$361 billion

could be saved globally

if OSH measures to prevent occupational injuries related to excessive heat were implemented.



9/10 worker exposures to excessive heat occur outside of a heatwave.



8/10

occupational injuries linked to excessive heat occur **outside** of a heatwave.



26.2

11

people living with **chronic kidney disease** attributable to heat stress worldwide.

Existing international labour standards and codes of practice related to climate change and OSH

General climate-related

OSH hazards

- Occupational Safety and Health Convention, 1981 (No. 155)
- Occupational Safety and Health Recommendation, 1981 (No. 164)
- Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187)
- Promotional Framework for Occupational Safety and Health Recommendation, 2006 (No. 197)
- Occupational Health Services Convention, 1985 (No. 161)
- List of Occupational Diseases Recommendation, 2002 (No. 194)
- Safety and Health in Agriculture Recommendation, 2001 (No. 192)
- Hygiene (Commerce and Office) Recommendation, 1964 (No. 120)
- Workers' Housing Recommendation, 1961 (No. 115)
- Reduction of Hours of Work Recommendation, 1962 (No. 116)
- Protection of Workers' Health Recommendation, 1953 (No. 97)
- Safety and health in shipbuilding and ship repair (revised 2019), Code of Practice
- Safety and health in ports (2018), Code of Practice
- Safety and health in forestry (1998), Code of Practice
- Safety and health in construction (1992), Code of Practice
- Safety and health in opencast mines (1991), Code of Practice

Excessive heat

- Ambient factors in the workplace (2001)
- Plantations Convention, 1958 (No. 110)



• Ambient factors in the workplace (2001)

Air pollution

- Working Environment (Air Pollution, Noise and Vibration) Convention, 1977 (No. 148)
- Working Environment (Air Pollution, Noise and Vibration) Recommendation, 1977 (No. 156)



- Prevention of Major Industrial Accidents Convention, 1993 (No. 174)
- Prevention of Major Industrial Accidents Recommendation, 1993 (No. 181)
- Employment and Decent Work for Peace and Resilience Recommendation, 2017 (No. 205)





Vector-borne

diseases

- Workers' Housing Recommendation, 1961 (No. 115)
- Technical guidelines on biological hazards in the working environment

Agrochemicals

- Chemicals Convention, 1990 (No. 170)
- Chemicals Recommendation, 1990 (No. 177)
- Safety and Health in Agriculture Convention, 2001 (No. 184)
- Safety and health in agriculture (2010)
- Safety in the use of chemicals at work (1993)





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An analysis of national legislation to address heat stress from 21 countries across the world showed some common provisions for workplace level measures:



Participatory risk assessment in the working environment integrating excessive heat.





Identification of and targeted strategies for worker groups at high risk, including outdoor and indoor workers, those in informal economies and and micro, small and medium enterprises (MSMEs), among others.



Heat acclimatization measures for workers without recent heat exposure.



Use of the wet bulb globe temperature (WBGT) as a potential heat stress indicator to assess the level of heat exposure, with varying safety thresholds based on work intensity.



Hydration strategies, including adequate sanitation facilities, especially for female workers.



Personal protective equipment (PPE) designed to protect workers from heat stress.



Education and awareness on heat stress and heat-related illnesses.



Rest, breaks or modified work schedules to limit or avoid exposure to excessive heat, including the ability to self-pace.



Regular medical check-ups and health monitoring.





Examples of legislation regarding maximum work temperatures

Austria	Air temperature of the work premises should be between 19 and 25°C for work involving low physical stress and between 18 and 24°C for work involving normal physical effort.
China	Outdoor work must cease when air temperature exceeds 40°C.
India	WBGT should not exceed 30°C in factory workrooms.
Singapore	The temperature in any working chamber, man-lock or medical lock in a worksite shall not exceed 29°C.
Spain	In enclosed workspaces the temperature must be between 17 and 27°C for sedentary work and 14 and 25°C for light work.
Thailand	Work must be stopped when WBGT raises beyond 34.0°C for low intensity work, 32.0°C for moderate intensity work and 30.0°C for very high intensity work.
Vietnam	Indoor workplace temperatures should not exceed 34°C, 32°C and 30°C for light, medium and heavy work, respectively.



Examples of provisions addressing excessive heat

Qatar: Ministerial Decision No. 17

- Workers cannot work outside between 10:00 to 15:00 from 1 June to 15 September. Regardless of the time, all work must stop if the WBGT rises beyond 32.1°C in a particular workplace.
- Yearly health checks for workers, as well as obligatory risk assessments for enterprises to mitigate heat stress, to be carried out in collaboration with workers.
- Employers must provide training on heat stress before the hot season starts, and workers should be given free and cool drinking water and access to shaded rest areas.

Belgium: Code du bien-être au travail

- Employers must carry out a risk analysis of the climatic thermal environments present in the workplace.
- When temperatures exceed certain values a programme of technical and organization measures should be drawn up to prevent or minimize exposure. Measures include technical adaptations, such as ventilation, reducing the physical workload by adapting work equipment or work methods and limiting the duration and intensity of exposure.

Spain: Royal Decree-Law 4/202358

- Enacted in May 2023 to introduce urgent measures to address issues caused by weather conditions and to prevent labour risks during high temperatures.
- Includes protective measures for outdoor workers, based on occupational risk assessments, task characteristics, and workers' personal or health conditions.
- Measures include restricting certain tasks during extreme weather, ensuring that salaries are not reduced if work is interrupted.





Examples of diseases included in national occupational disease lists

Malaysia: Conditions resulting from severe heat exposure, such as heat cramps or heat stroke Namibia: Diseases caused by hot or cold work environments, and all work involving exposure to the risk concerned

Lebanon: Diseases which result from exposure to UV radiation or any work that exposes workers to UV radiation exceeding national averages

Switzerland: Skin modifications resulting from photoexposure

Latvia: Certain vector-borne diseases, for example tick-borne encephalitis, Lyme disease and tularaemia Barbados: Infectious or parasitic diseases contracted in an occupation where there is a particular risk of contamination

Thailand: Diseases caused by chemical agents and particularly by pesticidesMozambique: Poisoning due to pesticidesSingapore: Organophosphate poisoning



Collective agreements



Improved OSH measures for workers across industries, such as construction, food and beverage supply chains, agriculture, and transportation, have been facilitated by collective agreements.

Examples

Brazil

- Poor OSH conditions are widespread among seasonal workers in Brazilian farms producing tropical fruit for export.
- On fruit farms in the São Francisco valley, unions and employers agreed to a sector-wide collective agreement.
- This covers OSH measures ranging from the provision of weather shelters, eating facilities, toilets and drinking water, to first aid and provisions for pregnant and nursing women.
- Research showed that collective bargaining has improved conditions for both temporary and permanent workers.

United States

- Concerns had previously been raised regarding the dangers UPS drivers face from heat, which can reach nearly 50°C inside trucks.
- In 2023, the Teamsters, one of the largest unions in the United States, negotiated a new five-year deal with UPS to add air conditioning, exhaust heat shields, fans and improved ventilation to UPS trucks.
- The 2023-2028 UPS Teamsters National Master Agreement is an example of how successful negotiations between employers' organizations and workers' groups can lead to significant improvements in OSH conditions for workers in a specific sector.





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Questions?

azzi@ilo.org

