



International
Labour
Organization



Ensuring safety and health at work in a changing climate

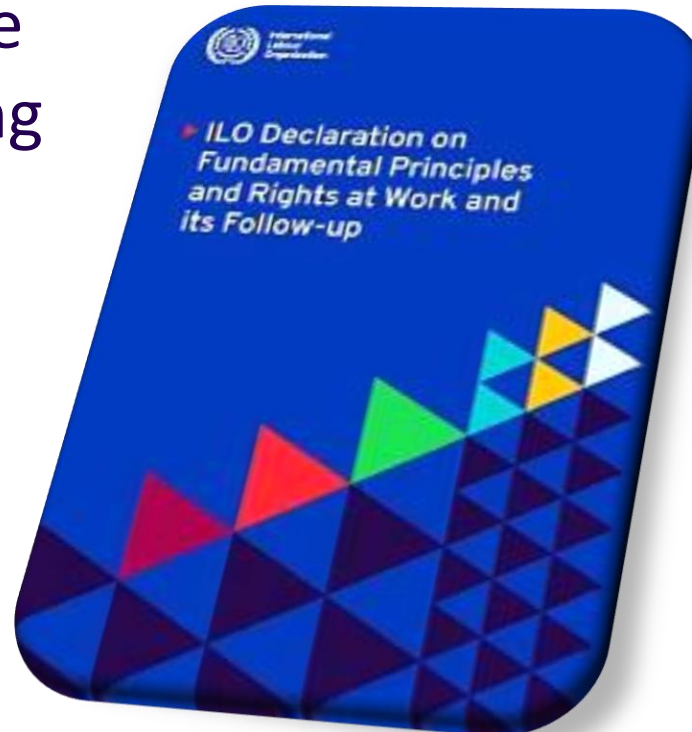
► World Day for Safety and Health at Work 2024

What rights has ILO designated as fundamental?

**a safe and healthy working environment
(C155 and C187)**

freedom of association and the
effective recognition of the
right to collective bargaining
(C87 and C98)

elimination of all
forms of forced or
compulsory labour
(C29-and-C105)



elimination of discrimination
in respect of employment
and occupation
(C100-and-C111)

effective abolition of
child labour
(C138-and-C182) ilo.org





Climate change

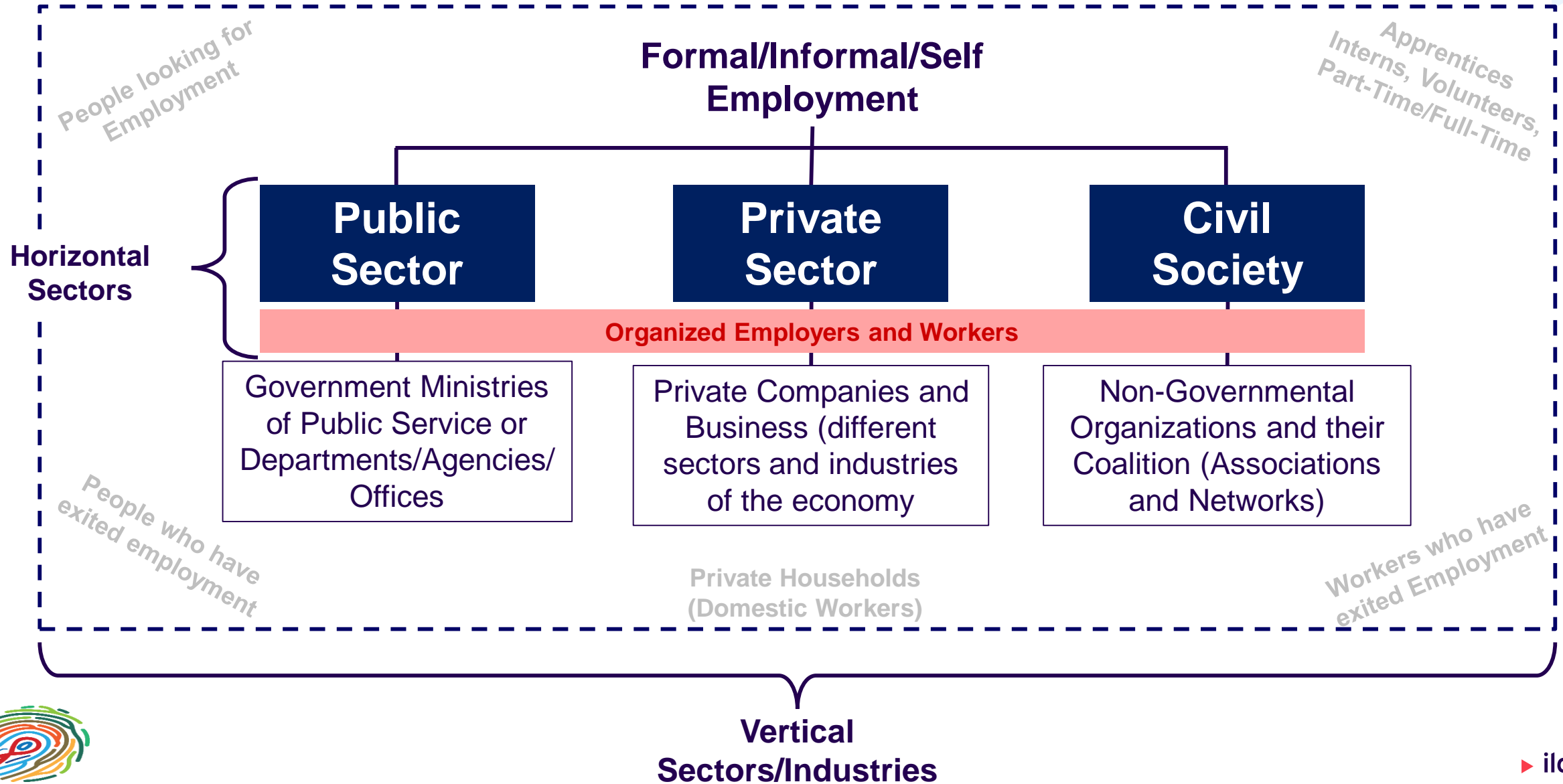
Climate change is defined by United Nations Framework Convention on Climate Change (UNFCCC) as “a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods”

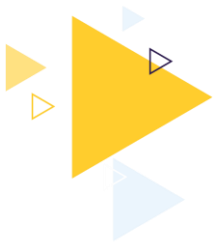


Climate change and OSH

- ▶ Climate change is already having serious impacts on planetary health, human health and the world of work.
- ▶ Workers are frequently the first to be exposed to the effects of climate change, often for longer periods and at greater intensities (ILO 2023).
- ▶ Climate change effects can lead to a deterioration of working conditions and an increased risk of occupational injury, disease and death (Kiefer et al. 2016).
- ▶ Numerous health effects in workers may result, including injuries, cancer, cardiovascular disease, respiratory conditions, macular degeneration and mental health issues.

Defining and Locating the World of Work



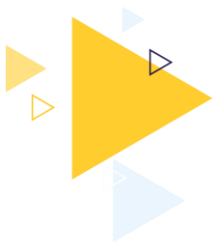


The impact of climate change on the world of work

- ▶ Climate change effects on OSH are unevenly distributed across regions and sectors.
- ▶ Workers particularly at risk:
 - ▶ Outdoor workers in physically demanding sectors, such as agriculture, construction and transportation.
 - ▶ Indoor workers in hot and poorly-ventilated environments.
 - ▶ Workers in emergency services, health care sector and other public services.
 - ▶ Pregnant women, children, older adults and persons with disabilities.
 - ▶ Workers in the informal economy, migrants and those in micro- and small-sized enterprises.
- ▶ Financial implications due to lost productivity, business disruptions and damaged infrastructure.

Key climate change issues impacting workers' health and safety





Excessive Heat



Solar UV radiations



Extreme weather events



Air pollution



Vector-borne diseases



Agrochemicals



Excessive heat

- ▶ Rising global temperatures may result in more frequent and severe heatwaves
- ▶ Heat-related risks are influenced by environmental conditions, physical exertion and clothing
- ▶ **High risk jobs:** Outdoor workers in physically demanding jobs and indoor workers in poor ventilated workplaces where temperature is not regulated
- ▶ **Primary health impacts:** Heat stress, heat stroke, heat exhaustion, rhabdomyolysis, heat syncope, heat cramps, heat rash, cardiovascular disease, acute kidney injury, chronic kidney disease, physical injury and mental health conditions

Every year

2.41 billion

workers are exposed

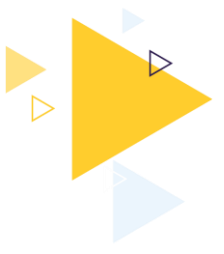
22.85 million

occupational injuries

18,970 work-related deaths

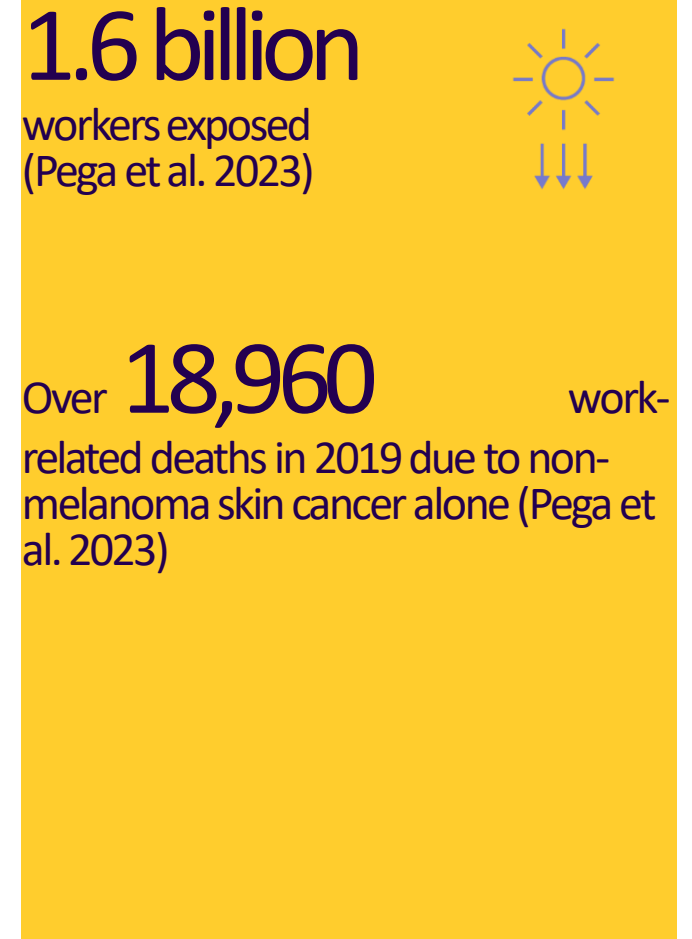
2.09 million DALYS

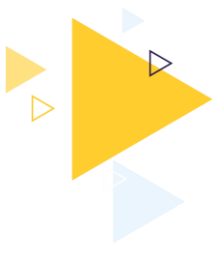




Solar UV radiation

- ▶ Thinning of the ozone layer is impacting the quantity of solar UV radiation reaching earth
- ▶ Workers may unknowingly face dangerously high levels of solar radiation exposure
- ▶ **High risk jobs:** Outdoor workers
- ▶ **Primary health impacts:** Sunburn, eye damage, weakened immunity and various skin cancers





Extreme weather events

- ▶ Projected increases in the frequency, duration and intensity of extreme weather events (heat waves, winter storms, tropical cyclones, droughts and torrential rains)
- ▶ Possible consequences include wildfires, flooding, famines, major industrial accidents and water-borne diseases
- ▶ Workers may be exposed during the event, in the immediate aftermath or during clean-up operations
- ▶ **High risk jobs:** Emergency workers, workers involved in clean-up, agriculture workers and fishing workers
- ▶ **Primary health impacts:** Traumatic injury, burns, respiratory tract injury, diseases from biological hazards, toxic effects from chemicals, physical and emotional fatigue, anxiety, stress and PTSD

Limited data on occupational exposures

2.06 million

deaths due to weather, climate and water hazards (not just occupational exposures) from 1970 to 2019 (WMO 2021).





Workplace air pollution

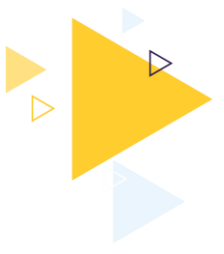
- ▶ Modified weather patterns have influenced levels of both outdoor and indoor air pollutants.
- ▶ Greater exposures are observed for outdoor workers in areas with high levels of air pollution generated by heavy traffic or industries.
- ▶ **High risk jobs:** All workers, particularly outdoor workers, transport workers and firefighters.
- ▶ **Primary health impacts:** Cancer (lung), stroke, respiratory disease, cardiovascular disease and eye irritation.

Over **1.6 billion**
outdoor workers at increased risk of
exposure

860,000
work-related deaths (outdoor workers
only) (ILO 2021a)

By 2060, **3.7 billion** lost
working days annually due to
exposure to air pollutions (OECD 2016)





Vector-borne diseases

- ▶ Climate change has been linked with an increased risk of vector-borne diseases in workers through:
 - ▶ Effects on vector population sizes, survival rates and reproduction.
 - ▶ Broader impacts on natural ecosystems and human systems e.g. changes in land use from droughts.
- ▶ **High risk jobs:** Outdoor workers.
- ▶ **Primary health impacts:** Malaria, Lyme disease, dengue, schistosomiasis, leishmaniasis, Chagas disease and African trypanosomiasis, among others.

15,170 work related deaths
annually attributable to parasitic and
vector diseases

accounting for **7.6%** of all deaths
due to parasitic and vector diseases





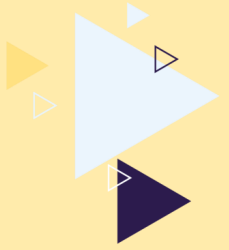
Agrochemicals

- ▶ Pesticide use can be impacted by climate change (loss of fertile soil, pest occurrence, crop characteristics).
- ▶ Highly hazardous pesticides (HHPs) continue to be a major concern
- ▶ **High risk jobs:** Agriculture, forestry, chemical industries, pesticide sales, greenspace and vector control.
- ▶ **Primary health impacts:** Poisoning, cancer, neurotoxicity, endocrine disruption, reproductive disorders, cardiovascular disease, chronic obstructive pulmonary disease, endocrine disruption and immune suppression.

Over **873** million workers in agriculture at increased risk of exposure

Over **300,000** deaths annually due to pesticide poisoning (Jørs et al. 2018)





Spotlight on Climate Change and Mental Health

- ▶ Job insecurity due to climate change can cause distress, especially in communities reliant on specific industries that will be impacted more significantly
- ▶ Specific occupations like those in disaster relief and recovery, construction, agriculture, and healthcare have been found to be particularly at risk for mental health issues due to climate change, including PTSD, depression and anxiety.
- ▶ Climate change impacts, such as excessive heat, can lead to sleeping disorders, behavioral changes, and decreased concentration, impacting work safety and productivity.

Protecting workers in a changing climate





ILO action to protect workers in a changing climate

- ▶ Promoting, respecting and realizing the fundamental principle and right at work of a safe and healthy working environment means also addressing dangerous climate change impacts in the workplace.
- ▶ International labour standards and other instruments provide guidance to protect workers against the different workplace hazards and risks, including those related to climate change.
- ▶ The 2015 Guidelines for a Just Transition towards Environmentally Sustainable Economies and Societies for All can be used to ensure that no workers are left behind during the transition to a green economy.
- ▶ The ILO Global Strategy on OSH 2024-30 highlights that OSH concerns related to climate change should be positioned high on global and national policy agendas.
- ▶ The 2023 International Labour Conference's General Discussion Committee on Just Transition emphasized urgent implementation of OSH measures for workers affected by climate risks.
- ▶ ILO engages in initiatives at the sub-regional level, such as Vision Zero Fund activities related to safeguarding safety and health in supply chains.

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)



Ultraviolet (UV)

radiation

- 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)



Extreme

weather events

- 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

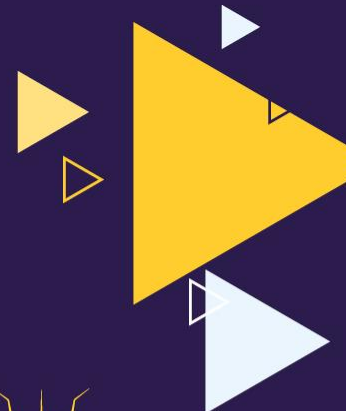
diseases

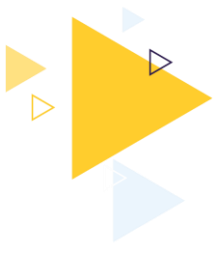
- Workers' Housing Recommendation, 1961 (No. 115)
- Technical guidelines on biological hazards in the working environment



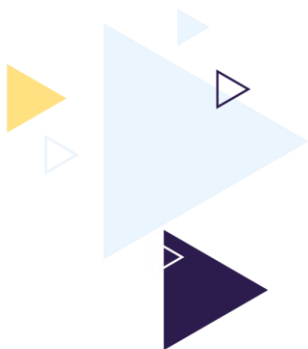
Agrochemicals

- 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)





National responses to key climate change issues





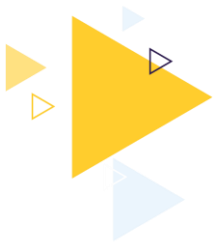
National policies and strategies

- ▶ OSH concerns related to climate change can be integrated into public health, environmental and climate change policies and strategies (i.e., explicitly refer to the protection of the health of workers).
- ▶ Sometimes, hazards and risks related to climate change are identified as priorities in national OSH policies and strategies, defining actions and initiatives to be implemented in the coming years (i.e., excessive heat).
- ▶ (ILO collaborating with DEL to support the development of a national strategy on **Occupational Health and Safety**)



Laws and regulations

- ▶ OSH legislations have historically addressed the protection of workers against **extreme temperature, non-ionizing radiation** (including solar UV radiation), **air pollution, biological hazards** (including vector-borne diseases) and **hazardous chemicals** (including agrochemicals).
- ▶ Some OSH laws also refer to the **protection of workers during extreme weather events** and natural disasters, requiring workplace emergency response plans.
- ▶ Sometimes, legislation may **require the employer to perform risk assessment** and to adopt some specific measures (e.g., acclimatization, hydration, ventilation, breaks, information and training, PPE and safety equipment, and other control measures).
- ▶ **Occupational exposure limits** have been adopted in some countries for exposure to heat and to air pollutants, but are very rare for other hazards, such as solar UV radiation or agrochemicals.
- ▶ In some countries, OSH legislation provides for **regular medical surveillance** for prevention or early recognition of the diseases associated with heat, solar UV radiation, air pollution, vector-borne diseases and agrochemicals
- ▶ Some countries include in the **national list of occupational diseases** heat-related diseases, diseases caused by solar UV radiation, diseases caused by biological hazards and/or pesticide-related disorders.



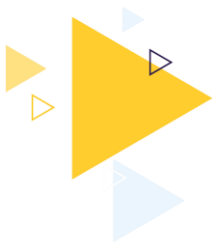
Collective agreements

- ▶ 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 have agreed 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.



Technical guidelines

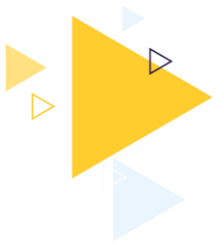
- ▶ Numerous technical guidelines have been produced by international and national OSH bodies and authorities, addressing workplace hazards related to climate change.
- ▶ Guidelines cover topics such as sun safety, extreme weather events and vector-borne diseases.
- ▶ In some cases, guidance on specific situations (e.g. wildfire smoke) have been developed.

Example of guidelines related to air pollution

Safe Work Australia

The guidelines follows the Hierarchy of Controls:

- ▶ **Elimination** – e.g. relocate work to areas with good air quality or postpone outdoor work.
- ▶ **Substitution** - Minimise risks by substituting the hazard with a safer alternative e.g. work inside where possible.
- ▶ **Engineering controls** - Protect workers by isolating them from air pollution e.g. use air purifiers or air locks.
- ▶ **Administrative controls** - Methods of work, processes or procedures designed to minimise risk e.g. rotate staff and increasing frequency of rest times and reduce the physical intensity of work to reduce how much air pollution is inhaled.
- ▶ **PPE** - Suitable, properly fitting, well-maintained and workers must be instructed on their proper use e.g. use P2 or N95 masks for respiratory protection



Training programmes and awareness raising initiatives

- ▶ Some government authorities, employers' and workers' organizations, NGOs, OSH bodies and other bodies have developed training programmes, campaigns and advisory initiatives.
- ▶ Awareness raising campaigns and community engagement strategies often involve targeting worker populations that are most at risk, such as in those in agricultural areas.

Example of training programme on excessive heat

United Arab Emirates

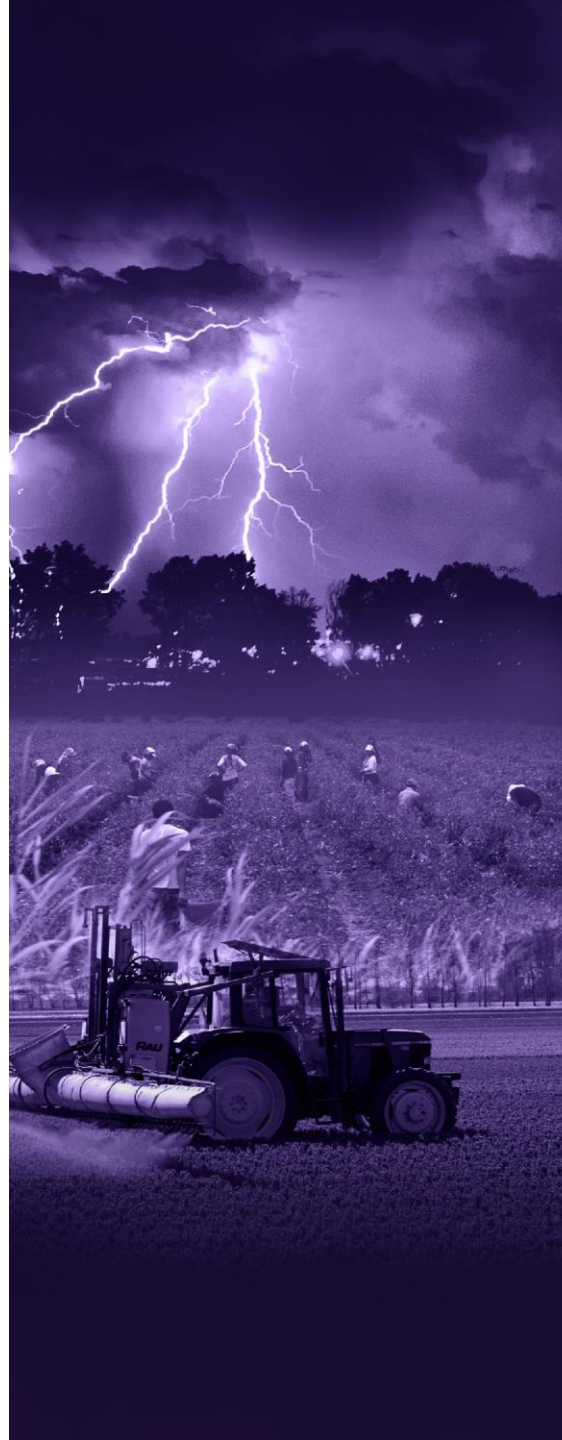
- ▶ The government launched the “Safety in the Heat” programme in collaboration with the Abu Dhabi Public Health Centre (ADPHC 2023).
- ▶ Focuses on educating approximately 800,000 workers and employers on effective strategies for managing excessive heat in the workplace
- ▶ Measures include hydration, salt intake, rest breaks, gradual adjustment to heat, reduced work demands, and monitoring at-risk individuals, as well as training on handling heat-related illnesses.



Public health initiatives targeting workers

- ▶ Climate change is an issue in which the health concerns of workers and the public at large clearly interconnect, thus it can be beneficial to integrate OSH initiatives within public health programmes and campaigns.
- ▶ Skin cancer prevention programmes have been set up in some countries to detect changes to skin in high-risk workers particularly exposed to solar UV radiations.
- ▶ Sometimes, public health initiatives aimed at controlling vector-borne diseases have been targeted worker populations that are most at risk.

Key takeaways





How employers can protect workers safety and health from impacts of climate changes

Consultation and Policy direction

- Bipartite consultation including seeking scientific advice
- Responsive workplace policies
- Risk assessment
- Risk Management Plan
- Preventative safety and health culture

Awareness & Protection

- Information sharing, education and training
- Risk-based preventive and protective measures beyond PPEs, e.g. cooling down spaces, adequate breaks, work/task staggering and scheduling, hydration
- Regular monitoring, e.g. medical surveillance

Injury and diseases management

- Incident reporting and recording culture
- Incident and accident investigation
- Seeking advice of occupational health experts
- Reporting injuries and diseases to prescribed authorities



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Thank you

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report here

