Climate change and occupational health:

Escalating risks and prevention strategies

Cyril Cosme
Director of the French office of the International Labour Organization (ILO)

Cyril Cosme studied at the National School of Administration and the Paris Institute of Political Studies before beginning his career at the French Ministry of Labor in 1997. He headed the Office of Collective Agreements and Workplace Conflicts before joining the General Secretariat for European Affairs in 2000. In 2004 he became advisor for social affairs then head of the employment, social affairs and health department at the Permanent Representation of France to the EU. He was social affairs advisor to the French ambassador in Washington in 2009, then delegate for European and international affairs at the social ministries in 2012. He has headed the French office of the International Labour Organization (ILO) since 2014.

Occupational hazards associated with climate change are increasingly alarming, with the most vulnerable categories of workers particularly at risk. Deaths caused from excessive heat and other climate-related dangers, such as extreme weather events, air pollution and vector-borne diseases are on the rise, with workers in the most at-risk sectors, such as the construction industry and agriculture, hit the hardest. The impacts are greater in countries of the global south where many people work outdoors and standards of protection are inadequate.

In this interview, Cyril Cosme, director of the French office of the International Labour Organization (ILO), discusses the risks related to climate change that workers face and describes the ILO's role in documenting these risks, drawing up standards for protecting workers and helping governments implement them, especially in countries that lack the capacity to manage these challenges alone.

Could you give us a brief description of the main global challenges in terms of occupational safety and health (OSH)?

Worldwide, 1,000 people die every day in a workplace accident, and a further 6,500 as a result of an occupational disease, totaling over 2.3 million victims every year. The data is an estimated average, with the situation varying significantly between regions.

The prevalence of occupational diseases is universal, but morbidity due to workplace accidents is higher in Africa (25%) and Asia (18%) than in Europe and North America (3%). Furthermore, declaration processes and epidemiological monitoring used to identify occupational diseases is far from systematic in many countries, resulting in figures that fail to reflect reality: cancers represent 50% of victims in high-income countries compared to 10% in Africa.

In what way have OSH issues become embedded in international standards as prerequisites for decent work?

Historically, labor law was framed in terms of occupational safety and health. In the event of an accident, employers were only obliged to compensate workers if they were shown to be responsible, which is why the principle of employers' strict liability was adopted. Today, the right to work in a safe and healthy environment is recognized as a fundamental human right, just the same as the prohibition of forced labor.

Several successive phases have led to this, and occupational health has always been central to ILO's concerns. In 1920, it founded the Industrial Hygiene Section and the first international regulations emerged. Today, the ILO is the body that draws up the directives that constitute a form of international OSH code.

International labor standards, in the form of agreements negotiated between governments, employers and workers in member states, have evolved in three ways:

- They initially served to protect workers from specific dangers in certain sectors, such as mining and industry, as well as from exposure to certain physical risks such as toxic substances and dangerous machinery. They also targeted specific groups of people, including women, night workers and children.
- These standards were then used to build social protection systems, with branches dedicated to workplace accidents and occupational diseases, adopting an approach based on compensation in the event of accidents.
- Today's standards are guided by a preventive approach, together with the tenet that views occupational health as a factor in overall wellbeing. This dates back to the 1944 Declaration of Philadelphia, which sought to make work a factor for personal fulfilment and instrument for each individual to contribute to the common welfare by establishing the principle that "labour is not a commodity".

Work and health are inextricably linked and must go hand in hand, which means health has to be a major component of efforts to ensure decent work.

How is work dependent on the environment and the quality of ecosystems?

Work puts people in direct contact with their environment. Humans use their work to transform nature, extracting resources from the natural world to feed themselves and produce goods and services. Climate change and pollution are damaging to ecosystems, with knock-on effects on working conditions and economic performance. It is estimated that close to half of global GDP is compromised as it relies heavily on ecosystemic services. For example, agriculture, fishing and forestry account for 1.2 billion jobs. Current trends make it likely that unsustainable overexploitation of resources will increase, leading to lower productivity and triggering price hikes, water shortages, soil erosion, and a decline in agricultural yields.

"Climate change and pollution are damaging to ecosystems, with konck-on effects on working conditions and economic performance."

This means that degrowth scenarios seemingly equate to an ecological *status quo*, with an economy that consumes huge quantities of fossil fuels and natural resources, resulting in a widespread drop in yields under the twofold effect of long-term extinction of resources and climate change.

These scenarios seriously call into question any hope for full and productive employment. Between 2000 and 2015, 23 million years of working life were lost due to environmental damage[1], and it is estimated that by 2030 we will see a deficit of hundreds of millions of jobs.

The ILO recently published a report highlighting the emergence of new climate change-related risks in the OSH sphere. Could you tell us more about these risks and how they impact workers?

As a general rule, climate change amplifies risks or creates new ones, with the strongest impact on the most vulnerable categories of workers.

The report you mentioned[2] presents six key impacts of climate change on OSH, selected for their severity and the magnitude of their effects on workers: excessive heat, solar ultraviolet (UV) radiation, extreme weather events, workplace air pollution, vector-borne diseases and agrochemicals.

Working in extreme temperatures is a risk that has long been documented. The worst-hit sectors are naturally those involving outdoor work or transport, such as agriculture and tourism. The number of workers exposed is estimated at 2.4 billion, with half of them in agriculture. In addition to heat stress causing a productivity loss equivalent to 80 million full-time jobs, working in very high temperatures also increases the risks of cardio-vascular problems.

Exposure to ultraviolet radiation concerns more or less the same population group. Around 1.6 billion people are exposed to this at work, despite the high risks of cancerous lesions that lead to 19,000 work-related deaths a year.

These two factors have been clearly identified and documented, as the associated risks are easier to observe and have existed for longer. This does not apply to other factors. Extreme weather events affect medical and emergency workers as well as people working in agriculture, fisheries and forestry. The World Meteorological Organization publishes data on the number of deaths worldwide, but does not distinguish work-related deaths. Similarly, it is difficult to gather accurate epidemiological data on vector-borne diseases and work-related exposure to pesticides. Air pollution

1 International Labour Organization. (2018). *World Employment and Social Outlook 2018: Greening with jobs*. International Labour Office. Available from https://www.refworld.org.

2 International Labour Organization. (2024, April 26). *Ensuring safety and health at work in a changing climate*. International Labour Organization. Retrieved from https://www.ilo.org.

represents an increased risk for outdoor workers and people working in transport. There are already up to 860,000 deaths a year linked to exposure to air pollution at the workplace, a figure likely to worsen as a result of climate change impacts.

It is worth noting that the 53% people worldwide without social protection are the most exposed to these risks. Inequality is already glaring and on the rise — with 1% of the world's population earning 7% of global income, while the 50% poorest people on the planet share just 12% of global wealth — and will worsen without corrective preemptive measures between rich and poor countries as well as within countries.

"The vulnerability of the working world to climate change essentially mirrors the current geography of global inequalities."

You mention inequality: which vulnerabilities need to be taken into account to understand the occupational hazards related to climate change and their impact on different groups of people?

The vulnerability of the working world to climate change essentially mirrors the current geography of global inequalities. The poorest countries will have fewer resources to help them adapt, just as their governments will have fewer means to implement the necessary policies. In addition to the increased vulnerability of southern countries, often hit harder by climate change impacts, disadvantaged groups such as the unemployed and workers in the informal and agrarian economies (where women are the majority and migrant workers are numerous) are also particularly exposed to the impacts.

For example, the poorest people are the most impacted by climate change because they are far more sensitive to rising prices for foodstuffs and energy. Food security for 40% of workers could be compromised.

Factors relating to age, state of health and disability are also important. Older people, very young adults, and people suffering from chronic conditions are more vulnerable to occupational hazards related to climate change.

These areas where vulnerabilities need to be taken into account echo the notion of fair transition: in the ILO's view, what does this mean and what does it involve?

It is important not to think of ecological transition independently from other challenges, particularly inequality. The current level of inequality is far from compatible with getting people to embrace the transition, and this is a direct threat. From this perspective, social justice is essential to transitioning toward a decarbonized economy.

I would like to recall the genesis of the notion of fair transition. In the early 2000s, environmental protection and the promotion of renewable energies led to the creation of new jobs, described as green. That was when the ILO launched its first dedicated program.

A few years later it became clear that the climate challenge went far beyond the question of green jobs, and that it required a paradigm shift. The ILO linked the climate crisis to the social crisis and published several studies showing that inequalities and environmental deterioration are two sides of the same crisis, rooted in a growth model driven by fossil fuels.

The Paris Agreement enshrined the concept of fair transition by including it in its preamble and linking it to the creation of decent work for all. That same year the ILO adopted guidelines for "greening the economy to make it as equitable and inclusive as possible for all by creating opportunities for decent work and ensuring no one gets left behind."[3]

In concrete terms, fair transition combines three major changes to the production system: energy transition, transition to a circular economy, and promotion of solutions rooted in nature. These three changes drive job creation in new ways compared to the conventional economic model we are familiar with.

A successful fair transition that gets people onboard needs to correct the factors behind geographical imbalances between the North and South, and redistribution imbalances within countries between different categories of workers, sectors, and income levels.

3 International Labour Organization. (2015). *Guidelines for a just transition towards environmentally sustainable economies and societies for all.* International Labour Organization. Retrieved from https://www.ilo.org.

How are climate change-related occupational hazards incorporated into national and international standards and policies, and what role does the ILO play in this process?

When it comes to OSH, there have always been established principles as well as innovations. Established principles include prevention: primary prevention (preventing the risk from arising), secondary prevention (guarding against the effects with protective measures), and tertiary prevention (reducing impacts in the event of damage). There is also the principle of the liability to workers of employers and order-givers. This legal framework has proven robust when confronted with new challenges, whether linked to the transformation of the production system, outbreaks of violence or harassment, sexism or discrimination.

"Climate change and its impact on OSH have put us in the same situation, where a new phenomenon has to be incorporated into prevention policies for businesses and professional sectors."

Climate change and its impact on OSH have put us in the same situation, where a new phenomenon has to be incorporated into prevention policies for businesses and professional sectors. The capacity to gauge risks and assess the prevention policies put in place is essential, although it involves having more epidemiological data. This is why the ILO plays its role at different levels:

- undertaking research and analysis to document new risk factors and the impact of climate change;
- drawing up standards, particularly recognition of the fundamental right to work in a safe and healthy environment. The application of these standards can lead to defining risk exposure thresholds, requiring the mandatory use of protective equipment, or adapting the list of recognized occupational diseases (as is already the case in a few countries for work-related skin cancer). Several ILO Conventions, listed in the ILO Codes of practice, cover risk factors linked to climate change, such as Convention 148 (1977) on the working environment (air pollution, noise and vibration);
- providing technical assistance for our members to put policies in place, particularly in developing countries.

Which actors must be involved in efforts to manage OSH risks linked to climate change?

Social partners play a central role in preventing climate change-related risks, as highlighted in ILO Convention 187. Only social dialogue allows for listening to those directly affected. For example, in western Europe we began to talk about the effects of extreme heat on work in the construction sector in the wake of the 2003 heatwave and the large number of interruptions to work sites due to heat stroke.

A notable example of the crucial role of social partners is the framework agreement between the Building and Wood Workers' International (BWI) and Belgian construction company BESIX,[4] which protects the safety and health of construction workers in the Middle East facing extreme temperatures. The agreement specifies that work sites must supply essentials such as drinking water in sufficient quantities and shelter from adverse weather conditions. Workers also have to be regularly informed about how to prevent heat stroke and sunburn. In 2023, BWI launched a new campaign called "Heat-up workers' rights, not the planet!" It aimed to raise awareness of the importance of OSH in the event of extreme heat and weather events and demanded better jobs and working conditions in a period marked by the climate emergency. Collective construction conventions in Greece and Spain also include the issue of extreme temperatures.

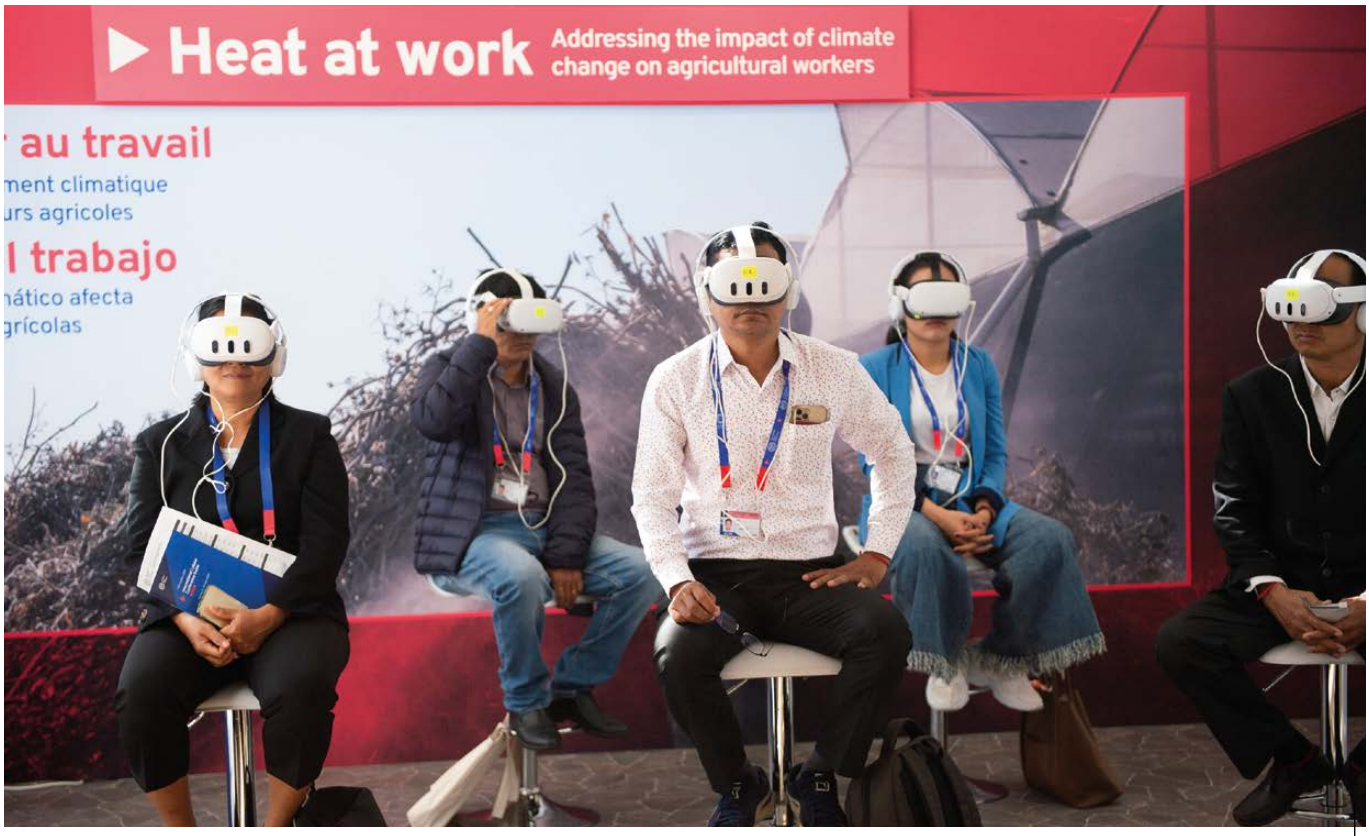
Can you identify any innovative approaches developed to protect workers?

Technology is being increasingly used to reduce OSH-related risks for workers exposed to dangerous situations. For example, drones can be used to assess risks linked to the accessibility of areas after storms or to investigate accidents. They can also be used to monitor and manage forest fires and help to contain them, even in isolated areas. Reducing the scope and duration of fires would cut risks for firefighters and other emergency workers. Smart clothing can also be used to reduce risks caused by extreme weather events. For instance, sensors can be incorporated into workwear to detect extreme body temperature, cameras can record and assess incidents, and GPS can warn workers if they are entering dangerous areas.

How does the ILO use the technological tools you have mentioned to help developing countries manage climate change-related occupational hazards?

We generally get involved at the stage when strategies and policies are being formulated, aiming to support mitigation and adaptation. The ILO has helped several countries with the formulation of their commitments to implement the Paris Agreement by including a social dimension (Nationally Determined Contributions).

4 Building and Wood Workers' International (BWI). (2017). *International Framework Agreement with BESIX Group*. December 14.



Session at the International Labor Conference

In terms of risk prevention, we build the capacity of labor administrations. Training actors is the first area where we provide support to encourage awareness of risks and how to prevent and deal with them. For example, workshops were organized to train work inspectors in Tunisia, Morocco and Egypt about vulnerabilities specific to women. The workshops tackled subjects such as heat stress affecting women working outdoors, air quality, and psycho-social stresses resulting from women's worries about their families and communities.

We also work to promote the exchange of collaborative good practices between actors. In tropical countries, health risks linked to vector-borne diseases impact economic growth. This means it is crucial to reinforce the health system globally and combine the two approaches, public health and occupational health. This involves reinforcing epidemiological monitoring and adapting professional practices.

For instance, a project in Tanzania studied the association of agricultural measures with public health to combat resistance to insecticides, which forms a major obstacle to controlling malaria (often due to inappropriate use of pesticides).[5] The project included workshops and training courses where farmers learnt to differentiate malaria vectors, identify agricultural diseases, use pesticides effectively, and carry out resistance tests. Research underlined the importance of raising farmers' awareness of ecology of mosquitoes and combining public health measures with pesticide management.

"Today, as new risks to workers have arisen and standards have been created to protect them, the workplace has become a central point for broadening social protection."

YOU UNDERLINE THE IMPORTANCE OF LINKING PUBLIC HEALTH AND OCCUPATIONAL HEALTH. AS WE CONCLUDE OUR INTERVIEW, COULD YOU TELL US MORE ABOUT THE RELATIONSHIP BETWEEN THESE TWO SPHERES AND THE OPPORTUNITIES THEIR INTERACTION OFFERS?

Occupational health and public health originally walked separate paths. Today, as new risks to workers have arisen and standards have been created to protect them, the workplace has become a central point for broadening social protection, particularly in southern countries where public health systems are less developed. In these regions, epidemiological monitoring at the workplace and risk prevention measures are being put in place in line with local legal obligations and the requirements of sub-contracting contracts with order-givers in northern countries.

These institutional mechanisms applied to companies were initially designed to prevent occupational hazards but are increasingly used to expand workers' social protection so that it covers all risks, thus offering an opportunity to develop public health.

5 Matowo, N. S., et al. (2022). Participatory approaches for raising awareness among subsistence farmers in Tanzania about the spread of insecticide resistance in malaria vectors and the possible link to improper agricultural pesticide use. *Malaria Journal*, 21(1), Article 277. https://doi.org/10.1186/s12936-022-04289-1.

Drone flying over a forest fire