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Occupational safety and health in global supply chains

Summary of key findings from recent research
conducted by Vision Zero Fund

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Introduction

Global supply chains contribute significantly to world trade and are a driver of economic growth and job creation in many developing countries. However, failures within global supply chains have also resulted in decent work deficits, including in occupational safety and health (OSH).

Vision Zero Fund seeks to achieve sustainable OSH improvements through the strong commitment, collective action, influence and resources of a wide range of stakeholders, including global companies, suppliers, workers, governments, international organizations and development agencies.

For this model of [collective action](#) to function effectively, timely knowledge must be available to inform the development of strategies.

To advance on the generation of OSH and global supply chains data and knowledge, Vision Zero Fund implemented a research project entitled [“Filling data and knowledge gaps on OSH in GSCs to strengthen the model of shared responsibility” \(2020-2021\)”,](#) with funding from the European Union.

This document presents the project’s key research findings. It is structured as follows:

- Section 1 presents a summary of the synthesis reviews on the drivers and constraints for OSH improvement in selected global supply chains conducted by the project.
- Section 2 describes the main findings of the research conducted on the effects of two types of disruptive forces, the COVID-19 pandemic and climate change, on workers’ occupational safety and health.
- Section 3 presents a summary of the main findings of the research focused on improving the collection and quality of data on accidents, injuries and diseases.

More information about the project, including its publications, can be [accessed here](#).

Section 1

Summary of the synthesis reviews on drivers and constraints for OSH improvement in the garment and agricultural supply chains

Between 2018 and 2020, the ILO, including through Vision Zero Fund, conducted a total of 11 assessments of the drivers and constraints for OSH improvement in two supply chains (agricultural, garment) in selected countries. All assessments followed the [ILO methodology for the assessment of drivers and constraints for OSH improvement in global supply chains](#).¹

The project produced two synthesis reviews, one per supply chain, that, in each: (i) identified OSH vulnerability profiles; (ii) identified common drivers within the supply chain that could be leveraged; and (iii) identified the constraints that should be addressed to improve OSH.

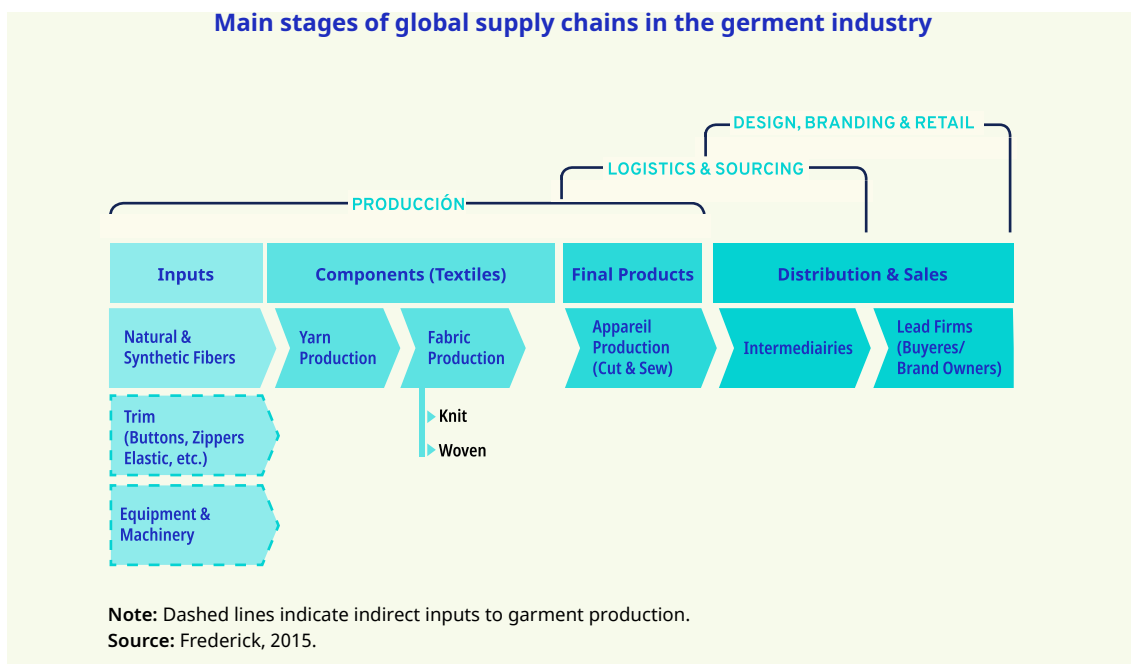
The review of the garment sector examined assessments conducted by the Fund in the textile/garment industry in Ethiopia, Lao People's Democratic Republic, Madagascar and Myanmar. Data from the ILO's [Better Work](#) programme was used to complement the findings.

The agricultural supply chain review (coffee, cotton, ginger, lychee, and palm oil) considered the assessments conducted by the Fund in Colombia, Lao People's Democratic Republic, Mexico, Madagascar, Myanmar and Indonesia.

In both reviews, the analysis was limited to specific activities and did not cover upstream inputs or final distribution and marketing activities.

1.1 Garment global supply chains

In the garment industry, global supply chains provide employment opportunities for millions of workers worldwide, with women accounting for the largest share of the workforce in garment factories.



1. The assessments help to identify the occupational hazards and risks to which workers are exposed in different stages of the global supply chains, the groups of workers who are exposed to these hazards, and the workers who are most likely to suffer from exposure and who also have limited capacity to cope with the consequences (also referred to as "OSH vulnerability profiles"). The assessments also helped to identify drivers and constraints for OSH improvements in global supply chains.

The garment-focused assessments identified several categories of occupational hazards and risks to which garment workers are exposed to in garment factories.² These include:

- risk of fire, resulting from unsafe electrical systems and wiring – which also present an electrocution risk – obsolete boilers and exposure to flammable materials;
- exposure to hazardous chemicals, mainly used in stain removal;
- repetitive movements and awkward working positions;
- contact with moving parts of machinery or tools without any protection;
- exposure to high temperature and loud noise;
- risk of falling from heights, slipping or tripping;
- psychosocial risks resulting from pressure to meet tight production targets, deadlines and heavy workload.

The assessments also surfaced specific factors that increase the likelihood of workers being exposed to occupational hazards and risks. These include:

- long working hours, particularly overtime; this can increase fatigue, which may lead to injuries while using equipment and increases exposure to musculoskeletal disorders from repetitive motions and awkward positions;
- poor or non-existent OSH management systems;³
- absence of measures to prevent and control occupational risks;
- low awareness of occupational risks;
- insufficient training; the case studies identified issues ranging from a lack of fire safety and machine safety training in Myanmar to insufficient chemical and OSH officer training in Ethiopia;
- no access or limited access to occupational health services;
- limited financial capacity to invest in OSH improvement; this is a particular challenge for subcontracting factories, which, tend to generate less income than prime contractors, and therefore face increased financial constraints.

Globally, women account for the largest share of workers in garment factories, particularly in sewing machine operations. As such, women are more likely to experience consequences associated with repetitive movement and have a greater potential for injury from sewing machines and from sewing machine needles. If women engage in stain removal with toxic chemicals while pregnant or nursing, their child might be at risk of exposure.

The most vulnerable workers to OSH risks were found to be those working in subcontracting factories and in factories producing for the domestic market in developing countries and, to a lesser extent, exporters to any market other than the EU and the United States of America. These enterprises are not required to comply with the standards set by private compliance initiatives and are generally smaller and located in areas where national OSH resources are non-existent or limited.

The limited development of national OSH systems in the four countries assessed was found to be a significant constraint on OSH improvement. This includes limited institutional capacities regarding OSH and a low awareness and enforcement of legislation. The review also found that research efforts remain scarce and fragmented and that additional country case studies from top global garment exporting countries would contribute to a fuller, holistic picture of drivers and constraints. More research on the economic benefits of investing in OSH improvement and management systems in developing countries could help convince stakeholders to invest time and resources in this area.

2. A hazard is anything with potential to cause harm or damage to safety and health. The combination of the likelihood of an occurrence of a hazardous event and the severity of injury or damage to the health of people caused by this event is commonly understood as an occupational risk.

3. An OSH management system is a set of activities, procedures, processes, and resources used to establish an OSH policy in an organization, to achieve objectives and to continually assess and improve on them (ILO 2001).

In all four countries, assessments found that buyers' requirements are an important driver of OSH improvement. Many multinational companies have standards relating to health, safety, environmental considerations, and worker treatment to which their suppliers must adhere. Buyers monitor suppliers by means of compliance initiatives and programmes administered by third parties, as well as by means of their own audits to ensure that buyers specific requirements are met. However, there were also several common limitations to OSH improvement found in all four assessments. These limitations included:

- buyers often rely on external audits conducted by auditors who may not be specialized in OSH, thus resulting in inadequate recommendations;
- challenges to ensuring traceability and reaching all suppliers beyond the first tier of the supply chain;
- low profit margins of some factories and limited incentive structures, especially for subcontractors beyond the first tier, which limits their capacities to invest in OSH;
- a highly competitive, global market; key priorities for global buyers and brands tend to be price, quality, lead time and firm capabilities.

Research commissioned by the Fund found that drivers for OSH improvement were also affected by standards established by destination markets. For example, European buyers showed the most concern for, and are the strictest with, supplier regulations; and Asian buyers tend to be the least demanding. The same was true for factories that supply garments to domestic retail outlets. By firm type and tier, the closer the firm was to the buyer, the more likely the firm was to be required to meet the buyer's standards. Larger, export-oriented factories tended to have greater awareness of these requirements and better access to support in comparison to subcontractors and factories outside exporting zones or industrial parks. Overall, however, evidence of the impact of the sustainable sourcing policies of multinational enterprises on OSH, at the level of suppliers, remains limited, especially beyond first-tier suppliers (Walters and James 2009; Walters and James 2011; Tessier et al. 2018).

The review concludes that more research should be conducted on:

- the economic benefits of investing in OSH improvement and management systems in developing countries, for example, direct savings or increased levels of productivity, could contribute to and increase the likelihood of stakeholders investing time and resources in occupational safety and health;
- the challenges and opportunities in respect of developing and implementing OSH management systems at the workplace level, especially in small and medium-sized enterprises;
- innovative practices that go beyond the challenges for implementing sustainable sourcing policies and document conditions for effective OSH management in supplier organizations;
- less evident occupational hazards and risks, such as biological, ergonomic, mechanical, and psychosocial risks, including violence and harassment at work.

Conclusions also highlight the need to generate more and better data on occupational risks and on the groups of workers most likely to be exposed to, and suffer from, those risks, which exist at different levels and in different units of the global supply chain.

The complete synthesis review is [available here](#).

1.2 Agricultural global supply chains

Global supply chains in agriculture span from the provision of inputs through to marketing and distribution. They differ based on product, process and end markets, and different types of enterprises and workers are involved in different countries and stages of the supply chain.

In the case studies, the supply chains were divided in four main stages:

- (i) raw materials/inputs
- (ii) farming
- (iii) processing
- (iv) marketing and distribution

The farming or production stage of the agricultural global supply chain begins with the preparation of land and planting of seeds, which is followed by crop husbandry, that includes fertilizing, treatment/ spraying, pruning and weeding, and harvesting. After the harvest, the products are transported for processing. The farming stage employs the most workers, particularly crop husbandry and harvesting, which represented the largest share of workers in the reviewed ILO case studies. The processing/transformation stage is divided between production for fresh consumption and for processing. Processing activities vary by product and are based on final use. Often, processing or transformation occurs in an industrial facility or factory, but in some cases, primary processing activities are undertaken by smallholder farms in village-based or household facilities.

In the assessments, the main occupational hazards of farming activities included:

- exposure to chemicals used for crop husbandry
- working in high temperatures and exposure to ultraviolet rays from sunlight
- potential for falling from heights, slipping or tripping
- noise from mechanical tools such as chainsaws during land preparation for coffee
- ergonomic hazards, primarily carrying heavy loads, awkward postures and repetitive movements
- mechanical/equipment-related risks, such as cuts
- snake and mosquito bites (the later can transmit infectious diseases);
- road and vehicle safety hazards
- psychosocial risks due to long hours and stressful work

All country assessments found that the national OSH system was insufficient to protect workers in the agricultural sector. The countries had limited capacity to conduct inspections beyond large facilities in more urban areas and to provide occupational health services.

Smallholders and non-permanent workers were found to be more likely to be exposed to occupational risks. Several reasons for this increased exposure exist. They lack access to OSH information and training. Farms tend to be situated in rural areas with few healthcare providers or OSH advisory services nearby. With reduced access to these services and social protection coverage, in the event of work-related injuries or disease, workers do not receive compensation, thereby limiting the financial resources available to them to cope with and address possible consequences of exposure. Smallholders generally lack OSH management systems, and many have insufficient funds and resources to take preventative measures towards mitigating occupational risks.

In Myanmar, the assessment indicated that farm owners and workers were not covered or automatically registered with the Social Security Board. Likewise, in Madagascar, most workers in lychee farming were not affiliated to the national employment injury insurance scheme. In Colombia and Lao People's Democratic Republic, the assessments show that while a voluntary option to join a social security scheme exists, many farmers are often unaware of the programmes or consider them too costly to use. Finally, in Mexico's coffee supply chain, informal workers – who make up an estimated 95 per cent of the production workforce – were found to lack access to the social security system and to healthcare services.

Processing

The assessments highlighted chief occupational risks which exist during processing, which appear related to fire and electrical hazards.⁴ This was seen in wet processing for coffee, due to unsafe electrical wiring and the use of combustibles; in the high-temperature processing of palm oil; in lychee processing, where sulphur is used; and in cotton ginning due to the high flammability of cotton. Other occupational risks identified in the studies include those resulting from:

- prolonged exposure to noise in ginger, palm oil and coffee processing in Lao People's Democratic Republic, and Mexico
- exposure to dust particles from processing ginger, cotton and coffee
- handling heavy loads in processing coffee, cotton and lychee
- awkward postures and repetitive movements in processing cotton, ginger and coffee in Lao People's Democratic Republic

Workers in processing generally have access to more coping resources than do workers in farming, as processing is likely to be carried out in a factory with a higher share of permanent workers. In Myanmar, however, ginger is processed by temporary or seasonal workers, who are not covered by employment injury insurance. In Madagascar, most lychee processing workers were found to be affiliated to the national social security fund only for the few weeks during which they are under contract. In Colombia, Indonesia and Mexico, non-permanent workers were not automatically affiliated to compensation schemes.

Investment in OSH improvements are often driven by standards embodied in private compliance initiatives. Workers employed on farms or in processing facilities that produce for the domestic market or Asian markets were not required to comply with standards monitored by private compliance initiatives. These private compliance initiatives also often had limitations, and evidence regarding the impact of sustainable sourcing policies on OSH at the level of suppliers remains limited. Three occupational risks that tend not to be specifically covered by private compliance initiatives are ergonomic risks (carrying of heavy loads, risks resulting from repetitive motions and awkward positions), biological risks from insect or other pest bites, and psychosocial risks. However, the notion of compliance initiatives is an effective medium for promoting improvements in the practices of suppliers and can serve as a vehicle for embedding OSH requirements.

The review concludes that more research could be conducted to study all of the stages of a global supply chain and cover additional products categories, such as fruits and vegetables. In addition, more research could collect further and better data on occupational risks, help draw occupational profiles, including gender-specific vulnerabilities, and be used to better understand the impact of sustainable sourcing policies on OSH. Moreover, it could also help identify innovative practices that go beyond the well-known challenges and clarify opportunities for developing and implementing OSH management systems in the agricultural sector, especially in small and medium-sized enterprises.

The complete synthesis review is [available here](#).

4. With all the case studies included farming, analysis of processing activities was limited for some countries.

Section 2

Main findings of the research conducted on the effects of disruptive forces (the COVID-19 pandemic and climate change) on workers' occupational safety and health

2.1 COVID-19 and Occupational Safety and Health in Global Supply Chains: Summary of research findings focusing on agricultural and garment/textile sectors

The COVID-19 virus has become a major disruptive force reshaping global production systems and value distribution. The pandemic and measures to contain it have impacted the lives, health and safety of the millions of people who work in global supply chains.

Identifying, understanding and anticipating the profound changes brought about by COVID-19, and their interaction with OSH outcomes and practices enables stakeholders to develop effective strategies to mitigate the impact of the pandemic and face any future pandemic. This research looks at the OSH measures taken in response to the COVID-19 pandemic to protect workers in two global supply chains that were severely affected by the pandemic: the agricultural and the garment supply chains.

Between November 2020 and March 2021, Vision Zero Fund conducted qualitative case studies in coffee growing regions in Colombia, garment/textile regions in Ethiopia and garment industry regions in Myanmar. In-depth interviews were conducted with various stakeholders,⁵ and with multinational enterprises.⁶ Given COVID-19 restrictions, data collection was limited mostly to virtual or telephone interviews, and case studies were limited to select facilities. Despite these limitations, the study provides rich data that can be extrapolated to other facilities. The country case studies identified areas for improvement, including workplace OSH management and risk assessments. The studies found gaps in OSH national systems, such as labour inspectors' lack of resources and skills to support workplaces and monitor compliance.

2.1.1 Case study: COVID-19 and OSH in the coffee global supply chain in Colombia

The coffee supply chain in Colombia is composed of five stages: (i) provision of inputs; (ii) farming and primary processing to produce parchment coffee; (iii) commercialization and transport of parchment coffee; (iv) threshing to obtain kernels or green coffee for export; and (v) exportation.

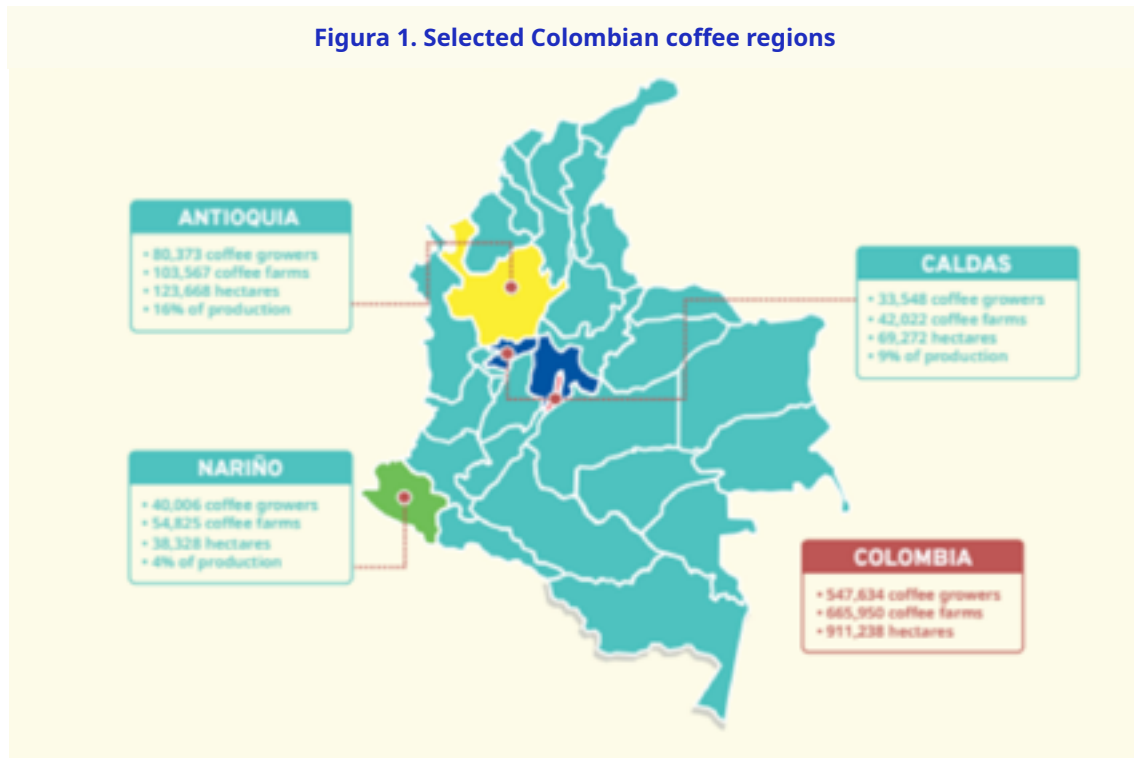
Each year, Colombia produces around 14 million bags of coffee. Annual coffee exports amount to approximately 12.5 million bags. Coffee farms employ an average of 730,000 people annually and, although the number of jobs generated in other stages of the coffee supply chain (commercialization, threshing and export) is unknown, most of these jobs found in the upper stage of the value chain are formal with access to social security protection. The farming and primary processing alone has 547,000 coffee growers, 96 per cent of whom are small producers with less than 5 hectares of land planted in coffee.

5. Stakeholders include workers and their organizations; employers and their organizations, global buyers; and all other actors supporting OSH, such as authorities responsible for OSH, labour inspectorates, occupational health services and social security/employment injury institutions.

6. Representatives from three multinational brands representing the textile/garment industry were interviewed at the international level. The Myanmar and the Colombia case studies reported on interviews with multinational buyers, while Ethiopia reported responses from factory managers about the actions of multinational enterprises.

Following the WHO declaration of COVID-19 as a global pandemic, the Colombian Government declared a state of emergency on 17 March 2020. Coffee was one of the few sectors that was allowed to remain open and continue operations during the Government-declared health emergency.

The start of the pandemic coincided with the beginning of the first semester coffee harvest in Colombia, from March to May or June (depending on the region) in 2020. The research conducted by Vision Zero Fund focused on the national level, and on the coffee-growing regions of Antioquia, Caldas and Nariño (Figure 1). Seventy-two key informants (23 of them women) were interviewed across the different stages of the Colombian coffee supply chain.



Research findings indicate that the coffee sector, led by the National Federation of Coffee Growers of Colombia (FNC), responded promptly to the challenges posed by the COVID-19 pandemic by developing and promoting COVID-19 protocols and preventive measures. Consequently, coffee production, harvesting, sales, storage and export operations continued.

One week after the detection of the first COVID-19 case in Colombia, the FNC launched the campaign “The health of EVERYONE is EVERYONE’S business,” aimed at coffee-growing families and residents of coffee-growing areas, with the objective of preventing the spread of the virus. Educational materials were widely distributed and, with support from Vision Zero Fund, the FNC also broadcast a radio soap opera in worker’s housing, with one episode focusing on COVID-19 prevention and mitigation measures.

Existing institutional arrangements in the coffee sector led to the rapid and coordinated institutional response at the national, regional and local levels, which was found to be a key driver for the development and adoption of OSH measures to prevent exposure to COVID-19 in workplaces.

At the workplace, measures included physical distancing, the use of PPE, disinfection, changes in work scheduling, and teleworking where possible.

The COVID-19 biosafety protocol for coffee farms, developed by the FNC in collaboration with the Ministry of Labour, lists further measures, to include:

- adding restrictions to leaving, and measures for returning to, the farm, particularly after visiting a town or areas with confirmed cases;
- making disinfectant solutions available to all workers;
- cleaning and sanitizing before workers' meal shifts.

Several multinational enterprises supported producers and farm workers in complying with COVID-19 protocols and provided training and PPE. In Antioquia and Caldas, in addition to the COVID-19 protocol for coffee farms, the Departmental Committees of Coffee Growers (FNC regional offices) disseminated and implemented their "harvest plans" with an additional COVID-19 component: coordinating activities with the mayor's office, regional health authorities, the police and the army to implement controls for preventing the spread of COVID-19. Enforcement of compliance with the coffee-sector COVID-19 protocol was delegated to the municipal or district secretary of health, within mayors' offices, without prejudice to the monitoring of compliance obligations of employers carried out by the Ministry of Labour.

The existence of OSH management systems in cooperatives, threshing factories and exporting companies and in some large farms was found to be a key driver in implementing COVID-19 OSH measures and determining their effectiveness. Study participants said that OSH management systems enabled a rapid response, taking into account government measures but also the particularities of each company.

Study participants felt that the proactive approach and OSH measures at the workplace were effective in protecting workers' safety and health and helped the sector to remain afloat when economic activity came to a halt in Colombia during the first months of the crisis.

Participants perceived that, along with the application of OSH measures in farms and other workplaces, measures promoted by the Government to prevent crowding, such as lockdowns and curfews, contributed to preventing the spread of the virus.

Rural workers reported that the OSH measures implemented, and the "natural" distancing afforded by the farms, made them feel safer in their workplaces, with the latter acting a shield against possible outbreaks. In contrast, older workers in rural areas reported feeling at increased risk of contracting the virus as the pandemic spread. They expressed concern about workers who considered COVID-19 as a "distant threat" and who remained complacent about complying with OSH measures.

Temporary workers appear to be the most vulnerable in the coffee supply chain, in part because of limited access to social security and health services. It was also reported that workers tended not to report COVID-19 symptoms for fear of losing the opportunity to work during the harvest.

Workers in urban areas in other stages of the coffee supply chain also indicated that they felt safe in their workplaces given the OSH measures in place. They reported that, in addition to providing the necessary protective equipment, their companies implemented and monitored preventive measures with the assistance of labour risk insurance companies. A worker at a threshing plant noted that there were only 2 COVID-19 cases out of 48 people working in his unit. Personnel working in cooperatives, threshing plants and export companies all perceived that the measures adopted reduced the risk of exposure to COVID-19 in their workplaces and that without such measures many more people might have been infected.

Opportunities to improve access to occupational health services and information in rural areas were identified and differences regarding OSH management were found between farms and companies at other stages of the coffee supply chain. More specifically, in farms, gaps were identified in risk assessments and in compliance with OSH measures.

Despite the difficulties expressed by some farm owners and managers in getting coffee pickers to comply with measures, such as mask wearing and physical distancing, they felt that having a COVID-19 protocol that was widely shared and communicated in simple language was a key factor in the continuity of their businesses without any major setbacks.

The complete case study is [available here](#).

2.1.2 Case study: COVID-19 and OSH in Ethiopia's textile/garment global supply chain

Since 2014, the Ethiopian Government has built nearly 14 industrial parks to attract foreign direct investment and boost industrialization, with a focus on the manufacturing of export items. The major companies located in the industrial parks produce textile, garment and leather products. More than 88,000 workers were employed in the industrial parks before the pandemic, most of them women.⁷

The garment/textiles supply chain in Ethiopia involves a wide range of actors and institutions that support OSH. Research conducted by Vision Zero Fund in 2020 identified gaps in the OSH measures adopted by garment factories. These gaps were attributed to a lack of enforcement of legislation, general lack of awareness about OSH risks and requirements; limited OSH investment; lack of OSH skills; and a shortage of occupational health services professionals.

Vision Zero Fund research⁸ found that the Ethiopian Government adopted a proactive approach from the outset of the pandemic, introducing protocols to prevent and mitigate the spread of the virus before the first case was even reported in the country. It adopted a multi-stakeholder approach involving the Government, employers' and workers' organizations, and NGOs, with support from international organizations, including the ILO. The stakeholders supported workplace prevention and mitigation efforts through a number of measures.

One such initiative was to create a COVID-19 workplace response protocol, which promoted preventive measures to be taken by employers, workers and safety officers. A national response team was also established. This team contributed to the drafting of protocol and supported the creation and functioning of COVID-19 response committees in factories. The response committees were responsible for (1) supervising preventive measures, including physical distancing among workers, (2) providing sanitizers, soap, masks, and an adequate water supply, (3) offering guidance on OSH issues in the workplace and (4) helping to ensure that measures were implemented.

Another important measure supported by the stakeholders was to strengthen awareness-raising. Workers, employers, and occupational health service professionals were trained on prevention and control of COVID-19, as well as the handling of cases. Employers' organizations also provided health information through brochures, banners, posters and radio broadcasts. Other specific measures put into place to prevent and limit the spread of the virus included temperature screening, PPE for workers and social distancing.

The Government also implemented various measures to minimize the impact of the pandemic on the private sector. More than half of all export-oriented firms and nearly one third of all firms in industrial parks received some form of government support. The most prevalent type of support was the deferral of rental payments, which was enacted by the Ethiopian Industrial Parks Development Corporation.

7. Meyer et al. 2020; IPDC 2020; Abebe et al. 2020; Mengistu et al. 2020.

8. The research is based on information from four factories and interviews with 84 key informants.

Almost all managers, supervisors and OSH professionals felt the measures were effective, while workers generally said they made them feel safe at the workplace.

However, research findings also indicated that the pandemic had a significant financial and psychological impact on workers. Those most affected were daily workers, temporary workers, female workers and low-skilled workers. Given numerous factory closures, contract terminations, restrictions on movement, fears of being exposed to the virus and financial problems, many workers left the industrial park areas and returned to their rural communities. Other reports indicated that workers were fearful of being tested because a positive diagnosis and quarantine could result in lost income or dismissal. Nevertheless, respondents interviewed indicated that the task force set up in factories to support workers through awareness-raising trainings helped to allay fears and mitigated some of the psychological impacts.

Indications are that compliance with OSH measures eventually dropped, in part because of changes in perception of the severity of the pandemic. Financial challenges also affected efforts to monitor the implementation of measures and provide workplace training. Most respondents reported that the cost of preventive and mitigating measures, such as provision of PPE for workers, additional vehicles for transportation, special arrangements for cafeteria services, and training, required additional resources that had a particular impact on employers facing financial difficulties. Some factories experienced problems with production because of worker absenteeism, sparked in part, by fears of infection. However, factory managers indicated that preventive measures enabled production to continue production and therefore ensured business continuity.

The case study findings suggest several areas that could be leveraged for OSH improvement in Ethiopia's textile/garment factories. These include government regulations, the existing OSH infrastructure, and robust social dialogue with international support and the involvement of multinational enterprises. Opportunities for improvement in terms of workplace OSH management, including in risk assessments, are also identified.

The complete case study is [available here](#).

2.1.3 Case study: COVID-19 and OSH in the garment global supply chain in Myanmar

In Myanmar, the COVID-19 pandemic dramatically impacted demand and supply in the garment global supply chain, with implications for OSH. The Myanmar garment sector accounted for almost 30 per cent of Myanmar's total exports in 2019 and employed more than 440,000 people, 90 per cent of them women, according to the Myanmar Garment Manufacturers Association (MGMA). The MGMA had 720 factory members in 2020, with approximately 90 per cent of the factories export oriented. A total of 114 garment-producing factories were permanently or temporarily closed in 2020 due to the COVID-19 pandemic.

In the context of COVID-19 prevention, OSH measures were implemented in the garment global supply chain to comply with government regulations, ensure continuity in production and protect workers' safety and health. However, reduced orders and international demand and global supply chain disruptions heavily impacted the garment sector in Myanmar.⁹

On 19 March 2020, the Government of Myanmar released guidelines for the prevention and control of COVID-19 in workplaces. The provisions were further updated and expanded with a collection of publications, guidelines and instructions. Factories had to close down twice:

first in April 2020 and then in September and October 2020 ("second lockdown"). A number of factories underwent mandatory inspections and were subsequently allowed to reopen.

⁹ It is important to note that following the military takeover in Myanmar on 1 February 2021, the political crisis has paralyzed the economy, which was already weakened by the COVID-19 pandemic with serious impacts on enterprises and workers. Estimates indicate that there has been a continuous deterioration in labour market conditions since the military takeover.



Vision Zero Fund research was conducted from November 2020 to January 2021 and focused on the Yangon, Bago, Patheingyi, and Mandalay regions. It is based on desk research and 72 key informant interviews.

At national level, the COVID-19 Committee, formally named the “Coronavirus Disease 2019 (COVID-19) Control and Emergency Response Committee”, was established in April 2020. Its work was to coordinate the national effort against COVID-19, issue regulations and measures, analyse testing and tracing results and report them to the public, and inform the public, the business sector and all stakeholders on the evolution of the situation. Measures taken to support workplaces in the supply chain to prevent the spread of the virus were spearheaded by the MOHS’ Occupational and Environmental Health Division, which took the lead role in inspection efforts in Myanmar.

Findings indicate that a range of mechanisms were enacted to support garment factories in the prevention of exposure and transmission of COVID-19 in workplaces. This included the development of guidelines and instructions for employers and workers and conducting workplace inspections to ensure compliance with requirements. The Fund’s project in Myanmar developed and implemented capacity-building and awareness-raising activities for constituents and stakeholders. It supported the then national government in strengthening compliance in the target sectors and beyond. Factories took measures to prevent the spread of the virus following the publication of government directives. These measures included temperature checks, physical distancing and the installation of handwashing stations. Participants in the case studies said there were challenges in ensuring physical distancing, especially in transport vehicles.

Measures were developed for categories of workers considered at higher risk of developing serious illness from COVID-19, such as older workers and those with pre-existing health conditions. But these measures were not implemented in all workplaces. Almost all the workers interviewed said they felt that the measures taken by factories were effective in containing the spread of the virus.

Communication and information on the measures and inspections required for factories to reopen were an issue, particularly during the first lockdown. Some of the challenges were eventually addressed and factories were better prepared to face OSH challenges posed by the virus during the second wave, which for some included a second lockdown.

When asked about their motivation to implement OSH measures in relation to the pandemic, factories representatives listed compliance with the government and multinational brand requirements, the protection of workers, and business continuity.

As in most countries, there were some major challenges in Myanmar that the Government and industries faced at the beginning of the pandemic. These included a lack of: clarity on roles and responsibilities; coordination among various offices and actors engaged in the response; and clear communication and information-sharing. There were also resource constraints and shortcomings in OSH management in factories and the national OSH system. There was also an acute shortage of inspectors, who reportedly lacked PPE, experienced transportation challenges and did not receive the information they needed in a timely manner. Factory and brand representatives also reported inspectors were not well trained on how to use the government’s compliance checklist or provide guidance.

Over time, some of these challenges were addressed. The research findings suggest that the development and implementation of measures might have benefitted from stronger collaboration, to effectively map areas of responsibility, and mobilize resources to avoid the lack of coordination and confusion which were reported.

The complete case study is [available here](#).

Effects of climate change on occupational safety and health in global supply chains with focus on agriculture and construction

The world of work and the natural environment are intrinsically linked. Climate change and environmental degradation have significant impacts on supply and demand in global supply chains as well as implications for OSH and the world of work.

Identifying, understanding and anticipating the interactions between climate change and environmental degradation, and their effects on the safety and health of workers in global supply chains, is essential for the development of effective strategies to ensure safer and healthier supply chains. Yet most studies to date focus on the general population, with little attention to OSH, particularly regarding the multidimensional impacts of climate change.

Through the project, the Fund conducted a preliminary literature review on the effects of climate change and environmental degradation on OSH in global supply chains, with a specific focus on the agricultural and construction global supply chains. This review will inform the Fund's upcoming work on protecting workers against climate change induced heat stress. For more information, contact vzf@ilo.org.

Section 3.

DATA AND STATISTICS ON NON-FATAL OCCUPATIONAL INJURIES AND DISEASES

Globally, the reporting, collection, and analysis of data related to fatal and non-fatal occupational injuries and diseases is grossly deficient and fails to provide a true picture of the magnitude of OSH challenges.¹⁰ In many countries, these deficits are due in part to a failure in the national reporting and notification systems. Deficiencies are also due to the failure to recognize and diagnose occupational diseases and the failure to cover important segments of the labour force, including domestic and agricultural workers; workers in non-standard employment; workers employed by small and medium enterprises (SMEs); and those working in the informal economy. Lack of statistics is also often the result of accident and disease data being siloed in separate government agencies (labour, social protection and health ministries for example) responsible for compliance with different laws and regulations and often using different processes, criteria, terms and definitions. Finally, under-reporting of work-related deaths, injuries and disease has been estimated to be as high as 50 per cent even in countries with well-established reporting systems.¹¹

The situation is particularly acute in developing countries, where data regarding occupational injuries and diseases are far less available; where records do exist, they are generally unreliable and far from comprehensive, usually covering a small fraction of the employed population.¹²

10. ILO, *Snapshots on Occupational Safety and Health (OSH): The ILO at the World Congress on Safety and Health at Work 2017*, p.16.

11. ILO, *Snapshots on Occupational Safety and Health (OSH): The ILO at the World Congress on Safety and Health at Work 2017*, p.16.

12. See Peter Dorman, *Estimating the Economic Costs of Occupational Injuries and Illnesses in Developing Countries* (ILO Working Paper, 2012), p. 28.

Because of the unavailability or unreliability of data in developing countries, a common practice is for researchers “to extrapolate epidemiological results from developed countries”.¹³ However, this assumes that the conditions in more- and less-developed regions are comparable, which they are not. The reasons are multiple. First, workers are more likely to be found in informal jobs and small businesses, which tend to have poorer work safety records. Second, labour unions’ efforts to pursue workplace safety in an effective manner have remained limited. Third, workers are more likely to engage in hazardous economic activities such as agriculture, fishing, construction, transportation and mining. Fourth, women face specific, gender-related risks factors when they are employed due to differences in training, physical vulnerability and sexual harassment. Finally, governments’ resources for prevention, research and enforcement of occupational safety standards are scarce.¹⁴

Improving the quality of data on accidents, injuries and diseases in developing countries was one of the objectives of the project. The project contributed [new estimates on the work-related burden of disease and injury](#) developed jointly by the ILO and WHO, and created practical guides (one for [workers](#) and one for [employers](#)) on how to improve and promote reporting, recording, and notification of occupational accidents and diseases. In collaboration with the ILO’s Statistics Department, it also produced two research outputs, namely (i) a quick guide on the sources and uses of statistics on occupational safety and health, and (ii) a mapping of different types of household and establishment surveys to collect data on occupational safety and health. Each will be discussed in turn.

3.1 Quick guide on the sources and uses of statistics on occupational safety and health

Statistics on occupational safety and health, including on occupational fatalities, injuries and diseases, are essential to assess the extent to which occupational hazards are prevented or controlled and workers are protected from work-related hazards and risks. Occupational safety and health statistics also inform the adoption of effective measures and campaigns to prevent and mitigate work-related risks. However, the production of reliable occupational safety and health statistics is not without challenges. Perhaps the main one remains the lack of available data on occupational safety and health in many countries around the world, others include problems of data timeliness, frequency, coverage, comparability and reliability.

This guide gives an overview of the main aspects of occupational safety and health statistics, including their relevance and uses. It also presents the international standards governing occupational safety and health statistics, as well as a description of the most commonly used occupational safety and health indicators. The guide also reviews the various types of potential sources of occupational safety and health statistics, highlighting their advantages and disadvantages. Finally, the guide points to the main challenges surrounding the compilation, dissemination and interpretation of occupational safety and health statistics.

The guide highlights a number of challenges and issues for further consideration:

► Data availability

It is arguable that the main challenge in the field of occupational safety and health statistics is the lack of data availability. In the quest to ensure the occupational safety and health of all workers, data transparency and the public availability of data are of utmost importance. Policy makers need to be able to access reliable data to develop and evaluate occupational

13. Ibid. p. 29.

14. Dorman citing Giuffrida et al. (2002), p. 32.

safety and health policies and preventive strategies, but the public availability of data can inform other key agents as well. For instance, researchers and journalists may cast light on crucial occupational safety and health concerns by analysing and reporting on statistics. Also, awareness of occupational safety and health issues can foster the commitment of governments and social partners to actively participate in securing safe and healthy working environments. Social partners (including unions and employers' organizations) may become aware of the risks and hazards of their own workplaces thanks to available data and promote action to ensure their own safety.

► **Variety of possible sources**

The variety of possible sources of data on occupational injuries (administrative records, establishment surveys and household surveys) hinders the comparability of data across countries. These source types follow different methodologies and even provide information on different specific concepts. In fact, even data derived from administrative records are not strictly comparable, since various types of records follow different rules and are maintained by different agencies. It is important to note that there may be a difference in units used from source to source: insurance records and notifications records will most likely give the number of cases of injuries (if one worker had suffered from several injuries throughout the year, he/she would appear as many times as the number of injuries suffered), whereas information derived from household surveys would refer to the number of persons having suffered from at least one injury (unless the survey reliably collects information on how many injuries each person suffered and the results are aggregated).

► **Data comparability across countries**

In addition to the variety of possible sources, many other factors contribute to hindering the international comparability of occupational safety and health statistics. These factors include (but are not limited to) differences across countries in the legal framework governing occupational safety and health, social protection systems, health insurance systems, the composition of the labour market (in terms of the prevalence of informal employment and self-employment and the sectoral composition, for instance), and the labour inspection resources. The study of occupational safety and health at the international level and comparisons across countries and regions of occupational accidents, injuries and diseases are crucial to the assessment of workers' undue exposure to occupational risks and hazards.

► **Data comparability over time and trend analysis**

The analysis of trends in occupational safety and health measures (such as occupational injury rates, for instance) provides information on the progress or deterioration in occupational safety and health, revealing the effectiveness of prevention measures and the eventual need for further regulation. It must be noted, however, that indicators on occupational accidents and injuries are volatile, since unexpected but significant accidents or national calamities bring about strong annual fluctuations. Hence, short-term trend analyses of occupational safety and health measures are rather difficult. Instead, trend analyses should instead focus on studying the underlying longer-term trend behind such sharp changes.

► **Importance of data disaggregation**

Data on occupational safety and health are essential for planning preventive strategies because they signal areas of particular concern. With a view to designing more targeted prevention strategies and related policies, it is recommended to produce and analyse occupational safety and health indicators disaggregated by various items of interest. Disaggregation brings to light the groups of workers, economic activities or occupations with

the highest risk of work-related accidents, injuries and diseases. They can then be targeted more effectively for inspection visits and the development of regulations and procedures, as well as for safety campaigns.

► **Impact of the coverage of the statistics**

When interpreting occupational safety and health statistics, it is crucial to keep in mind what the statistics refer to and what they cover. The statistics may be highly reliable, but only within their coverage and scope. Interpreting them as if they were representative of the country as a whole, of all workplaces and all workers when they are not, could be highly misleading. In particular, it is important to know if the source of statistics (whether it is an administrative record, an establishment survey, or a household survey) excludes some areas of the country, some economic activities, some establishment sizes, some categories of status in employment and/or some groups of workers. In order to have a better understanding of occupational injuries in the country, other sources of data (covering the remaining sectors of economic activity, workers in informal employment and workers registered with other –or no – insurance schemes) should be viewed as complementary.

► **Analysis of occupational safety and health statistics within a given context and through a coherent set of indicators**

It is imperative to take the context into account when interpreting occupational safety and health statistics. Indeed, the context (in terms of the legal framework, the social protection system, the health insurance system, the configuration and performance of the labour market, the economy, the state of social dialogue, and the role of the labour inspection) greatly determines key features and characteristics of occupational safety and health, and of occupational safety and health statistics. To perform a complete analysis of the state of occupational safety and health, it is necessary to interpret all the relevant indicators together, as a coherent set, and not to refer solely to one specific measure. For instance, it is important to know the number, prevalence and incidence of fatal and non-fatal occupational injuries as well as of occupational diseases, with information on the causes of the injuries and diseases and key characteristics of the workers and their workplaces. It is also crucial to have data on the consequences of occupational accidents, injuries and diseases, in terms of work days lost, income lost, production lost, burden of disease in mortality rates, etc.

► **Need for coordination across agencies**

The compilation, dissemination and use of occupational safety and health statistics involves many different agencies within a country. Thus, to realize the full potential of occupational safety and health statistics it is crucial to count on strong institutional cooperation. Typically, within a country, the national statistical office holds the statistical mandate and expertise (including designing and conducting sample surveys), while the labour inspectorate monitors occupational accidents and injuries, employers report accidents to the labour ministry and different areas of the social insurance (or private insurances) deal with compensating fatal and non-fatal occupational injuries. Information on occupational diseases is usually compiled by the health ministry or other competent bodies. Therefore, it is imperative to have a coherent system of occupational safety and health statistics where all the agencies involved cooperate and collaborate, pooling together their sources of information and their expertise to inform effective policies on occupational safety and health matters.

The full guide is available [here](#).

3.2 Collecting data on occupational safety and health: A mapping of different types of household and establishment surveys

The report provides an overview of different types and content of household and establishment surveys with the aim to inform and support countries in the development of such surveys. More specifically, the report aims to provide information that will assist countries in selecting the most appropriate mix of data sources and survey vehicles and question sets that will reflect the national context and needs.

To collect the information needed to provide a sufficiently representative overview, 22 countries or territories at different stages of economic development and with different levels of statistical capacity were selected from all regions of the world, including the eight countries in which the Vision Zero Fund implements projects.¹⁵ Information was compiled about household surveys, establishment surveys, administrative records, official estimates and other types of source for the latest year available in each of the 22 countries or territories. This included information on coverage (for example geographical coverage, population, establishment size, institutional sector, economic activity and reference group, as applicable); the main indicators on OSH available; and the types of disaggregated statistics available for each group of indicators (for example whether the data can be disaggregated by variables such as sex, occupation, migrant status and economic activity).

For those countries in which household surveys, establishment surveys or other non-administrative data sources were identified, further desk-top research was undertaken to gain information about the data collection methods used and other methodological issues, such as sample design. Investigation and analysis were undertaken, where possible, to determine how the data are used and disseminated in order to evaluate data quality and assess the extent to which data from different sources are integrated to provide a coherent statistical picture. When statistics from different sources were compiled for the same or closely related indicators, for example on cases and rates of occupational injury, analysis was undertaken to compare the results and assess the strengths and weaknesses of each source.

The report reached a number of important conclusions:

Relevance and importance of household and establishment surveys as a source of data on OSH

Based on the mapping exercise and analysis of statistics available on OSH in the 22 targeted countries, it was evident that good-quality and useful statistics on occupational injuries and work-related diseases can be produced based on data collected in both household surveys and establishment surveys. Household surveys are used for this purpose much more frequently than establishment surveys, most commonly as part of a supplementary or regular module of questions in national labour force surveys.

Household surveys have the important advantage of allowing coverage of the entire population, and therefore include workers with all kinds of employment status, as well as those in unpaid forms of work, including volunteers, unpaid trainee workers and own-use producers of goods and services. However, due to sampling limitations, household surveys do not usually provide information at a detailed level on the occupations and economic activities in which occupational accidents occur and diseases are acquired.

¹⁵ The following 22 countries or territories were included in the mapping exercise: Argentina, Armenia, Austria, Colombia, Ethiopia, Finland, France, Honduras, Lao People's Democratic Republic, Madagascar, Mexico, Myanmar, Occupied Palestinian Territory, Pakistan, Philippines, Russian Federation, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America, Uruguay, and Viet Nam.

Establishment surveys are also capable of providing reliable information on OSH, especially with respect to the nature of the accident and injury, as this information is likely to be kept in personnel records in considerable detail when insurance claims for compensation are made. It is also possible for establishment surveys to provide detailed information on the occupations and economic activities in which injuries and diseases occur. However, this requires a large sample and possibly a survey dedicated to the subject. For many countries, the cost of collecting statistics in establishment surveys at this level of detail may be prohibitive. Equally importantly, employer surveys frequently do not cover certain types of establishments such as small businesses and those in the informal economy.

Strengths and limitations of administrative data

Administrative data, especially the records of agencies that provide workers' compensation insurance, can also be a source of rich and detailed statistics on occupational injuries and diseases, as well as on topics related to workers' compensation and labour inspection. In many countries, administrative data will also be the best source for statistics on fatalities arising from occupational injuries and diseases.

In countries with low levels of informality, administrative records can provide relatively comprehensive and complete statistics on occupational injuries and diseases. Frequently, however, the number of cases and incidence rates obtained from administrative sources are significantly lower than those obtained from household surveys. This implies significant levels of under-reporting and/or incomplete coverage in administrative records, when some groups of workers do not have workers' compensation insurance. This is especially the case in countries with high levels of informal employment or when insurance coverage is not compulsory for some workers, such as the self-employed or casual and short-term employees.

Importance of using multiple types of data source

In countries with high levels of informal employment, household surveys are likely to be the only source of data that enables an assessment of the total incidence of occupational injuries and work-related diseases. This implies that consideration should be given in these countries to including questions on occupational injuries and work-related diseases in household surveys, either on a permanent basis, or as a supplementary module of questions. Even when countries have very strong reporting and compensation systems that have near complete coverage, it would be important to compile statistics, at least on occupational injuries, from household surveys on a periodic basis in order to assess the extent of completeness of administrative data and the effectiveness of the workers' compensation insurance system.

Finally, the report concluded with a number of concrete recommendations:

- ▶ In countries with high or moderate levels of informal employment or low levels of workers' compensation insurance coverage, household surveys should be seen as the main source of statistics on the prevalence of occupational injuries and work-related illnesses. These countries should consider including a module of questions on the topic on a regular basis, either annually or every few years, in a household survey such as the labour force survey, a multi-purpose household survey or a working conditions survey.

Data on occupational injuries and diseases from administrative records such as insurance records can be used to produce richer and more detailed statistics than household surveys on the distribution of injuries and diseases by occupation, economic activity, the nature of the injuries and diseases, and the type of occurrence. Where possible, countries with high levels

of informal employment should therefore complement statistics obtained from household surveys with data obtained from administrative sources and seek to improve the quality and coverage of the statistics obtained from these sources as part of wider policy initiatives to formalize the informal economy.

- ▶ In countries with low levels of informal employment and high levels of workers' compensation insurance coverage, insurance records may be the most useful or main source of statistics on occupational injuries and diseases. These countries should collect data from household surveys on a periodic basis in order to assess the extent of completeness of the administrative data and the effectiveness of the workers' compensation insurance system. Administrative data will generally be the most useful source of statistics on fatalities due to occupational injuries and diseases, as well as on indicators such as the level and nature of coverage by workers' compensation schemes and labour inspection services. If data on injuries and diseases are not available from administrative sources, for example because of different reporting mechanisms in different jurisdictions, establishment surveys can provide a rich source of information that is broadly comparable with the data from administrative sources, although it may not be as detailed. Establishment surveys should also be used as a source of data on OSH practices.
- ▶ When statistics from different sources are compiled and disseminated, this should be done in an integrated manner, with explanation of what the statistics from each source mean and the reasons for the differences in estimates based on different data sources.
- ▶ Finally, employers, workers and their representatives play important role in OSH data collection and analysis. Social partners take an active role in national recording and notification systems, and need to be involved, from the very beginning, in the design of a system for national data collection and analysis, including in the design of any survey to collect data on OSH.

The report can be accessed [here](#).

Conclusions

The aim of the EU-funded project [“Filling data and knowledge gaps on OSH in GSCs to strengthen the model of shared responsibility” \(2020-2021\)](#) was to address some of the research and knowledge gaps related to OSH and global supply chains. As a result of the research conducted, stakeholders now have access to more information on the drivers and constraints for OSH improvement in selected supply chains and on the impact of disruptive forces (i.e., COVID-19 and climate change) on workers' occupational safety and health. However, research gaps remain, and further research is needed. Vision Zero fund will continue to generate much-needed data and knowledge on OSH in global supply chains to reduce accidents, injuries and diseases for all workers in global supply chains.



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