

INCREASING LABOUR SHORTAGES IN EUROPE: KEY CONSIDERATIONS FOR OCCUPATIONAL SAFETY AND HEALTH POLICY AND PRACTICES

1. Introduction

Labour shortages have become a persistent challenge across the European Union (EU), though their intensity varies significantly between Member States. Even before the COVID-19 pandemic outbreak, many EU countries were experiencing tightening labour markets. In 2019, job vacancy rates, a standard measure of labour shortages, were at their highest since the onset of the financial crisis (European Commission, 2023). After the pandemic, labour shortages quickly re-emerged, and by the end of 2024 they had returned to their 2019 levels in many sectors. Similarly, the number of hiring managers who have reported that finding qualified staff is a problem for production has grown significantly over the past 7–8 years (European Commission, 2024). Moreover, labour shortages are widespread across sectors, geographical areas and educational attainment levels.

Although a high number of vacancies and labour shortages is, in principle, good news for workers, it also carries **associated risks related to occupational safety and health (OSH)**. In sectors facing worker shortfalls, workloads for existing staff may increase, stretching working hours and intensifying pressure to maintain output with fewer resources. This raises concerns about risks of fatigue, burnout and accidents for the current workforce (Hildebrandt et al., 2023; Eurofound, 2023). These issues are particularly acute in occupations where the workload is essentially fixed, regardless of staffing levels, such as health and long-term care, and education (Sandmeier et al., 2022). However, they also occur in sectors with longer-term assignments, such as construction, or where it is difficult and costly to scale production in the short term (such as in manufacturing). Furthermore, some underlying causes of shortages, such as an ageing workforce or demanding job conditions, intersect directly with OSH issues. An ageing workforce, for instance, is more prone to musculoskeletal disorders (MSDs) and may recover more slowly from injuries, increasing accident risk and sickness absence in physically demanding roles (Miller et al., 2024).

At the same time, good OSH practices could be part of the solution. Improving health, job safety, and overall quality may make jobs more attractive and help retain workers, lengthening careers. Poor OSH practices not only hinder retention but also directly contribute to labour shortages, as work-related injuries and illnesses increase sickness absence and temporarily remove staff from the workforce. The current labour shortage situation could help drive such improvements towards better, safer and healthier jobs, shifting the power balance towards workers in bargaining processes. This article examines recent developments in labour shortages in the EU and discusses key structural drivers with a forward-looking perspective. It then considers how labour shortages could potentially interact (and have already interacted) with OSH, and their implications for OSH policies and practices. In the coming decades, Europe will face major transitions, including demographic ageing, the green transition, and rapid advances in automation and AI. These trends are expected to disrupt the labour market and possibly lead to an increase in labour shortages in known and new areas. Forward-looking OSH policies can play an important role in alleviating labour shortages related to longer working lives and in protecting, retaining and recruiting workers in key sectors experiencing shortages.

2. Labour shortages in Europe

There is no precise definition of what constitutes a labour shortage. In general, labour shortages refer to an imbalance where the demand for workers (vacancies) exceeds the supply of workers willing or able to take those jobs under the prevailing conditions (Eurofound, 2021). By stipulating that workers must be ‘willing and able’, the definition highlights that labour supply also depends on how safe, healthy,

and otherwise attractive the jobs are. Vacancies perceived as hazardous, exhausting, or of low quality (for example, because of the pay or flexibility offered) may deter applicants or render them physically unable to accept the job, thereby contributing to a shortage (Zwysen, 2023). Shortages can be *quantitative* (meaning a sheer lack of available workers, often indicated by low unemployment and high vacancy rates) or *qualitative* (meaning that the skills or other attributes of available jobseekers do not match those required for the position). A marker of a quantitative shortage is when companies from many sectors across a region report unfilled jobs and very low unemployment (a 'tight' labour market). A qualitative shortage exists when unfilled vacancies coexist with high unemployment, indicating that jobseekers' skills or preferences do not align with the jobs available (Eurofound, 2021). In practice, it is difficult to make a clear distinction between qualitative and quantitative labour shortages, and they often overlap. For example, Europe's current situation involves elements of both: overall labour supply is tight in many countries (quantitative constraint), and employers complain of difficulty finding workers with the right skills or willingness (qualitative mismatch) (European Commission, 2023; ELA, 2023).

Several indicators help measure labour shortages. Common metrics include the job vacancy rate (the proportion of total jobs that are vacant), the vacancy-to-unemployment ratio (vacancies divided by unemployed persons, also known as the 'tightness' ratio), and employer surveys on recruitment difficulties. For instance, the EU's Business and Consumer Surveys ask employers if a lack of labour is limiting their production, with the proportion responding 'yes' providing a qualitative indication of shortages (European Commission, 2025a).

A high vacancy rate typically signals strong labour demand relative to supply. For example, the EU's job vacancy rate stood at 2.3 % in Q4 2024, down from a peak of approximately 2.9 % in late 2022 but still above pre-pandemic levels. In 2021, during the post-COVID-19 economic rebound, the vacancy-to-unemployment ratio rose to unprecedented levels in many countries (within the euro area, there were two vacant jobs for every jobseeker), before easing slightly by 2024 (European Commission, 2023; OECD, 2024). Meanwhile, historically low unemployment rates complement vacancy data: the euro area unemployment rate reached 6.3 % in late 2024, its lowest on record, indicating that most of those in the active labour force are already employed. Similarly, many managers continue to cite difficulties in hiring workers as being their business's primary problem. However, the percentage has declined since its peak in 2022 (European Commission, 2024). **There is evidence that companies with poor working conditions experience higher staff turnover, and must therefore hire more frequently** (Cottini et al., 2011; Arnoux-Nicolas et al., 2016; Sull et al., 2022, based on US data).

However, there is a lack of evidence to suggest whether such companies also face greater difficulties in finding new workers, though recent German evidence shows that workers take OSH-related features into account when choosing employers (Arnold and Kotte, 2024; Bach and Hammermann, 2024). Arnold and Kotte (2024), for example, found that employers whose flyers included workplace health promotion programmes were perceived more positively than those that did not. In their experiment with fictitious employers, people who were presented with a flyer from a company advertising workplace health promotion programmes were more likely to say that they wanted to apply for a job at that company and work there, expressed a stronger desire for more information about the company, and were more likely to accept an invitation to an interview. Similarly, based on a survey of 5,000 workers in Germany, Bach and Hammermann (2024) report that offering a secure job in which workers can develop their skills and are fairly remunerated for doing so is perceived as essential for employers' attractiveness.

The European Labour Authority (ELA) also reports shortage occupations, based on reports from EU Member States' employment services that paint a similar picture of widespread labour shortages (ELA, 2024). The overall trend over the past 6–7 years, which was only briefly interrupted by COVID-19, suggests that **labour shortages (at least in some occupations) are persistent and structural rather than driven by short-term economic fluctuations**.

Labour shortages vary widely across Member States. As at Q4 2024, **Belgium and the Netherlands** had the highest job vacancy rates in the EU, at 4.1 % each (Eurostat, 2025a; data not covering public services). Other countries in northern and Western Europe such as Austria (3.6 %) and Germany (approximately 3.2 %) also reported above-average vacancy rates. In contrast, several countries in southern and Eastern Europe reported much lower vacancy rates – the rate in **Bulgaria, Poland and Romania** was just 0.7 % in Q4 2024, and only 0.9 % in **Spain**. However, through the EUROpean Employment Services (EURES) network, Romania has identified 154 shortage occupations (more than one third of all occupations in the statistical system) (ELA, 2024), ranking it third in the EU, behind

Belgium and the Netherlands. **Slovenia** is another exception, with a high vacancy rate and many occupations reported as having labour shortages.

These differences underscore that, while prevalent across the EU, labour shortages manifest differently across national labour markets. In some Member States, their labour markets are less tight when measured by vacancy rate.

There are differences in the extent of labour shortages across sectors (Eurostat, 2025a; Zwysen, 2023). The **services and skilled trade** sectors recorded the highest vacancy rates in late 2024. For instance, administrative and support service activities (which **include temporary work agencies and other personnel services**) showed the highest vacancy rate, exceeding 3.5 %. The **construction** sector also had a high vacancy rate of 2.9 % in the final quarter of 2024, reflecting chronic shortages of craft workers such as bricklayers, electricians and plumbers (trades that many countries report as hard to fill). **Information and communication (ICT) and professional/scientific/technical services** likewise showed above-average vacancy rates of around 2.5–3 %, as the demand for digital skills and specialised expertise remains intense across Europe. The **hospitality** sector (accommodation and food services) is another sector with shortages, though less intense than in the years immediately following the COVID-19 pandemic. **Manufacturing and retail trade** have relatively low vacancy rates (just below 2 %), albeit still high relative to what was observed in the 2000s. **Public sector shortages in healthcare and social work** are also evident in some countries (2.4 % vacancy rate). This is consistent with the evidence collected by the ELA (for the latest year, 2023) showing that healthcare continues to be a key shortage sector in many EU countries. For example, nurses are flagged as a shortage occupation in 17 countries, with more than half saying it is a ‘high severity’ shortage occupation (ELA, 2024).

Importantly, specific sectors and occupations are consistently in short supply across Europe. Over the past five years, three broad groups of jobs have stood out as experiencing **chronic shortages** in multiple countries: **information technology professionals, health and care professionals, and skilled trades in construction/manufacturing** (ELA, 2023). For example, almost all countries are seeking more software developers and IT engineers. Likewise, healthcare roles (such as nurses, doctors and long-term care workers) are widely understaffed, a problem aggravated by **ageing populations**. In the skilled trades, Europe has shortages – from welders, sheet metal workers and plumbers to truck drivers and heavy machinery operators. Many of these occupations (for example, heavy truck drivers, welders, pipefitters and concrete workers) have consistently topped shortage lists for several years, indicating a structural issue in filling vacancies. An analysis of EU labour shortages from 2017 to 2022 found no change in 10 of the top 15 occupations facing widespread shortages over that period (ELA, 2023).

3. Drivers of labour shortages

Widespread labour shortages in the EU coincide with high employment rates. Most EU countries have seen labour force participation rates recover to or even exceed pre-pandemic levels. A higher **share of the working-age population** is working than ever before. While labour shortages will ease in some countries once public deficits are reduced, for example in France and Belgium, persistent shortages driven by **structural factors** will continue across occupations and countries.

Three significant structural developments are likely to influence labour shortages in different occupations: population ageing, the green transition and digitalisation/AI and automation. **Population ageing** is expected to increase **demand for health and long-term care personnel**. Moreover, the long-term care workforce is ageing (Barslund et al., 2021), and it is becoming increasingly challenging to recruit young people. **Older workers in physically demanding jobs** have been found to have higher rates of absence, thereby increasing demand for workers (Andersen et al., 2021).

The **green transition** is expected to generate new employment opportunities while also decreasing demand for some occupations. Demand will rise in construction, energy efficiency and renewable energy – occupations already affected by chronic shortages (Eurofound, 2023; European Commission, 2024). Meeting EU climate objectives requires expanding the skilled construction workforce for the renovation, insulation and installation of low-carbon systems, as well as new roles in waste management and circular economy services. However, the skills demanded may differ from those in traditional construction or manufacturing, requiring upskilling and retraining. Moreover, workers in

carbon-intensive industries, where demand is expected to decrease, are not necessarily located in places where new green jobs will emerge, constraining the labour market adjustment. The green transition is therefore likely to intensify shortages in the short to medium term.

Digitalisation/AI and automation will continue to reshape labour demand. Digitalisation has increased demand for ICT specialists and workers with advanced digital skills in all sectors, and is changing the way work is organised. Employers report persistent recruitment difficulties for software developers, data analysts and technicians able to maintain automated systems. At the same time, AI and further automation by advanced robotics will diminish the demand for labour in jobs that can be automated. Though technological change can ease shortages in certain routine or hazardous jobs by reducing exposure to physical risks, the pace of change also creates transitional shortages as the labour market adjusts.

Since the COVID-19 pandemic, two additional developments have been contributing to labour shortages. Although there has been no change in the prevalence of part-time work (Eurostat, 2025b), the **number of average hours worked per worker** has decreased more rapidly than its long-term trend since the COVID-19 pandemic (Astinova et al., 2024). In a tight labour market, this will increase labour shortages. Another factor influencing labour shortages is **working conditions, including occupational health and safety**. Rising labour shortages in many sectors, such as healthcare, transport and storage, accommodation and food services, and construction, correlate with **poor working conditions or low pay** (Zwysen, 2023; Causa et al., 2025). For example, jobs in accommodation and food services, as well as healthcare, often involve shift work, night and weekend working, but relatively low wages. Since COVID-19, workers have become more reluctant to take up jobs with poor working conditions (Zwysen, 2023).

Looking ahead, the labour market trends associated with demographic ageing, the green transition and digitalisation/AI will persist in the coming decades, particularly in directly affected sectors such as health and long-term care and construction. Moreover, ongoing developments in digitalisation/AI and automation are likely to accelerate change in the labour market across many occupations, potentially resulting in shortages. The consequences of (persistent) labour shortages extend beyond employment figures and sectoral imbalances to the quality and safety of work itself. Understanding how shortages interact with OSH risks is therefore important to anticipating their broader implications and to guiding effective OSH policies and practices.

4. Implications of labour shortages, with a focus on OSH

Persistent labour shortages have **profound negative implications for society as a whole, as well as for customers, employers and workers, especially in occupations and sectors that are labour- and contact-intensive**, and where shortages are highly **visible**, such as in health and social care or education (Bergfeld et al., 2022). For example, **employers** that are facing labour shortages may experience productivity declines and reduced operational capacities due to skills mismatches or shortages, and may encounter challenges in meeting regulatory demands (including those related to OSH) and quality requirements as they face additional costs relating to worker recruitment and onboarding, and so on (Eurofound, 2021; 2024). Not only do these issues have short-term potential impacts, but they also reduce companies' growth potential in the long run, and thus have wider economic and societal consequences (Eurofound, 2021; Bergfeld et al., 2022).

In addition, labour shortages have been associated with reductions in the quality of goods or services delivered, which is particularly problematic in sectors and occupations that deal with vulnerable **customers or patients**, such as in the long-term care sector (Peutere et al., 2023). **Workers** experiencing labour shortages at their workplace may face deteriorating working conditions and aggravated OSH risks, which in turn could lead to a decline in physical and mental health, safety and well-being. In many work contexts, staff shortages mean that the same amount of work, or even more work, must be done with fewer workers. This is especially true in sectors where **labour shortages are persistent, while demand for goods or services continues to rise** (for example, long-term care, where demand for care provision is increasing due to population ageing and staff shortages are already persistent). For workers, the physical and psychosocial risks associated with their job are both exacerbated (Miller et al., 2024). On the other hand, labour shortages may tip the power balance between employer and workers in favour of the latter, resulting in more attractive, safer and healthier

jobs that are accessible to a wider pool of workers than before (Zwysen, 2024; Brunow et al., 2022; European Commission 2024c). Although such potential positive effects do exist, this section further elaborates on the key implications of labour shortages from an OSH perspective, highlighting the OSH risks in particular. Potential opportunities are then discussed in Sections 5 and 6.

4.1 Labour shortages, quality of work and worker outcomes

For the current workforce, labour shortages can create pressures that **aggravate existing OSH risks and give rise to new OSH risks**. Box 1 below documents existing OSH risk factors based on the 2019 and 2024 waves of the European Survey of Enterprises on New and Emerging Risks (ESENER). When staffing is inadequate, or experienced or skilled workers are difficult to find, the remaining workforce typically faces **deteriorating working and employment conditions**, such as **higher workloads**, a **higher work pace**, **longer working hours**, **missed or shorter breaks** during work and in between working days, and **other conditions that elevate their risk of accidents, injuries and ill health** (Hildebrandt et al., 2023; Eurofound, 2023).

Box 1. OSH risks measured by ESENER surveys.

Based on data from the 2024 European Survey of Enterprises on New and Emerging Risks (ESENER), the most commonly reported risk factors affecting workers are prolonged sitting (reported by 64% of surveyed establishments), repetitive hand or arm movements (63%), having to deal with difficult patients, customers or pupils (56%), and lifting or moving people or heavy loads (52%) (EU-OSHA, 2025). Similar to the findings of the 2019 ESENER, factors leading to musculoskeletal disorders (MSDs) as well as psychosocial risk factors are thus highly prevalent across all sectors in the European Union (EU-OSHA, 2019). Among the psychosocial risks, the most reported risk was having to deal with difficult customers, patients and pupils (59%), followed by time pressures (45%), long or irregular working hours (21%), poor communication or cooperation (18%) and job insecurity (11%) (EU-OSHA, 2019). These results are largely echoed by the 2024 ESENER data. Finally, in 2019, 48% of the surveyed establishments reported risks of accidents with machines, 44% reported risks of accidents with vehicles in the course of their work, and 34% reported increased risks of slips, trips and falls (EU-OSHA, 2019). In 2024, these percentages remained roughly similar. It is essential to note that these various risks are, moreover, interconnected. Ample research has highlighted, for example, that musculoskeletal risk factors are linked to psychosocial risk factors and vice versa, leading to compound effects on workers' physical and mental health and well-being (EU-OSHA, 2021).

Labour shortages can **aggravate all of these OSH-related risks**. First, as mentioned above, labour shortages lead to **increased working hours, workloads and work pace, or a higher work intensity**. Excessive work intensity (as well as an insufficient workload) can pose risks (ILO & WHO, 2016; Cleary et al., 2016; Eurofound, 2023). These risks may relate to **the pace of work** – such as working at high speed – or the **degree of control** a worker has over that pace. Related factors include tight deadlines, unrealistic workloads, and insufficient time to complete tasks (ILO & WHO, 2016). Workers working at high intensity are more likely to experience **greater working time-related stressors**, such as irregular hours and work-life conflict, and face **elevated emotional stressors**, including emotional demands, discrimination and external pressures, while reporting **fewer supportive resources** such as trust, recognition and fair pay (Heylen et al., 2023). High work intensity is common in roles with heavy workloads and can significantly **increase workers' stress levels** (Heylen et al., 2023). Moreover, when jobs demand very high speeds or impose tight deadlines, it becomes challenging for workers to carry out tasks effectively without compromising their own safety and health. Sustained high work intensity is difficult for any worker to endure, but it poses an even greater strain on older workers (Niedhammer et al., 2021; Heylen et al., 2024).

Building on recent research on OSH risks and labour shortages, the following aspect(s) are interesting to focus on:

Working hours have increased significantly since the onset of the COVID-19 pandemic, and particularly since 2020 (Heylen et al., 2024). Although long or irregular working hours were reported less often than other psychosocial risks in the 2019 ESENER survey, they remain especially common in specific sectors, including agriculture, forestry and fishing, accommodation and food services, and health and social care (EU-OSHA, 2022), all of which are sectors with labour shortages. Extended working hours often entail **unsociable schedules**, for example working during evenings, nights, weekends, or on public holidays, which can significantly disrupt a person's work-life balance (Eurofound, 2023). In recent years, there has been a noticeable increase in the number of workers with jobs requiring night shifts, weekend work or irregular hours. The pandemic intensified this trend, particularly in sectors such as the health and social care sector, where workers faced abrupt increases in workload and extended shift durations (Heylen et al., 2024).

It is important to mention here that the increase in workloads and working hours also comes with **physical and ergonomic risks** alongside the stress levels mentioned above (psychosocial risks), and has been associated with **elevated risks of suffering from a stroke or heart disease** (Descatha et al., 2020; Li et al., 2020). De Kok et al. (2019), for example, report that organisational risk factors that are closely associated with at least one type of musculoskeletal disorder (MSD) include insufficient time to complete tasks, lack of clarity about work expectations, having a work pace dictated by customer demands or direct managerial control, an inability to choose or change the order of tasks, and a lack of flexibility to take breaks when needed. These issues all emerge or are reinforced in a context of staff shortages. According to Krishnan et al. (2021), nurses who work long hours in staff shortage situations and experience physical overload due to patient handling are at a high risk of developing a work-related MSD. Similarly, previous research has highlighted that understaffing issues are associated with near misses, accidents, increased work-related traffic safety issues, **and injuries**. Andel et al. (2022), for instance, report higher levels of near misses in hospitals with both quantitative understaffing (lack of staff) and qualitative understaffing (lack of experience).

Besides having to handle their usual tasks, workers may also be asked to **take over work from colleagues** (for example, a colleague who is on sick leave or has left the organisation but is yet to be replaced). **Such work may involve tasks that the worker is not familiar with, or has not received any training on.** This in itself presents OSH risks, as in such cases workers may unknowingly perform movements without the right equipment or tools or without the appropriate procedure; they may be exposed to an unfamiliar work environment that presents different risks that they are unaware of or not used to; they may experience role ambiguity, and so on. Worker shortages thus place an intense strain on the remaining staff, especially in service roles that cannot be deferred or automated, such as education or healthcare (Tamata and Mohammadnezhad, 2022; Sandmeier et al., 2022).

This chronic overstretch is already reflected in **health data**. Hildebrandt et al. (2023) directly link perceived staff shortages to higher morbidity. More than half of affected workers frequently feel exhausted; 35 % report insomnia or musculoskeletal pain; 23 % suffer from headaches – rates that increase in step with the severity of shortages. Except in the IT sector, sickness absence is above average in every occupation with persistent staff shortages. A recent worker survey in Germany echoes this picture: overstretched workers report **less enjoyment, a poorer work atmosphere, limited career prospects, and greater fear of falling behind** (KOFA, 2023). Half say they cannot devote the care their tasks require. Under time pressure, corners are cut on safety, increasing the likelihood of accidents, while high stress fuels a vicious circle of reduced hours, job exits, **and a deteriorating sector image**. Another example from the healthcare sector is the work by Aiken et al. (2024), who report how work environment and staffing (in terms of work-life balance, intention to leave, and so on) relate to patient safety in hospitals across six European countries.

4.2 Labour shortages and OSH risk prevention and management

The Charter of Fundamental Rights of the European Union (CFR) provides workers with the **right to working conditions that respect their health, safety and dignity**. This right is echoed in Principle 10, 'Healthy, safe and well-adapted work environment and data protection', of the European Pillar of Social Rights (EPSR). Principle 10 foresees that workers have (i) the right to a high level of protection of their health and safety at work; (ii) the right to a working environment adapted to their professional needs and which enables them to prolong their participation in the labour market, and (iii) the right to have their personal data protected in the employment context.

The 'OSH Framework Directive' (**Directive 89/391/EEC**) contains **obligations for employers and workers**. Employers have a legal obligation to ensure the safety and health of workers in **every aspect related to work**, while Member States must ensure adequate controls and supervision in the implementation of these obligations. In addition, the European Commission's Strategic Framework on Health and Safety at Work 2021–2027 ('**OSH Strategic Framework**') defines priorities and actions for improving workers' health and safety, while addressing economic, demographic and societal changes.

The EU member states consequently pays close attention to the management and prevention of OSH risks in workplaces. The starting point for effective OSH risk management is a **risk assessment that identifies the risks and hazards in the work environment**, as well as the measures implemented to address them. Based on the 2024 ESENER survey, around 75 % of the surveyed establishments do carry out regular risk assessments, which is comparable to the findings from earlier ESENER waves (EU-OSHA, 2025). This also indicates, however, that in one fourth of the establishments, risk assessments are not done regularly, or not at all. The 2024 ESENER further reveals that the coverage of homes and persons not directly related to the organisation have both declined, which is problematic given the changing nature of work and work environment. Finally, it is clear from the 2024 ESENER data that further efforts are needed to involve workers in the design and implementation of measures following a risk assessment, to discuss OSH issues in team meetings, and to provide OSH training to managers and workers (EU-OSHA, 2025).

In a context of **growing labour shortages**, the effective management and prevention of OSH risks may come under (even greater) pressure, for several reasons. First, increased workloads and long working hours may **draw attention and resources away from OSH risk prevention or cause shifts in priorities** (Prados, 2025). For example, it is well documented that in industrial and manufacturing sectors, safety risks tend to receive more attention than psychosocial risks, and a further reduction in time and resources is likely to reinforce this trend. Closely related to this, when fewer resources and attention are available for prevention and management, and worker turnover is high, worker involvement in OSH risk management is likely to decrease (Hansez, 2010; Howard et al., 2022). Similarly, **OSH training targeting both management and workers** may be overlooked in such circumstances. More generally, when faced with tight deadlines and high workloads, the time and resources available for training tend to decrease, as all workers are needed to complete the work. This is especially problematic when staff shortages are filled by hiring workers without the required skills or experience, which itself presents risks if these workers are not adequately trained when starting their job. In addition, as discussed above, when encountering staff shortages, workers may be required to take on unfamiliar tasks and combine multiple tasks, which again increases the risk of accidents or injuries. This may require workers to prioritise some tasks over others, creating the risk that important **maintenance** work is postponed, which can cause safety and health risks later on. Related to this, when faced with tight deadlines and high workloads, workers may skip safety checks, circumvent safety protocols, or refrain from using the required tools or personal protective equipment (Andel et al., 2022). The **monitoring and enforcement** of the correct use of personal protective equipment, safety protocols and other relevant measures are likely to be hampered by labour shortages. Well-designed OSH programmes are therefore not only protective but also generative, as they enlarge the pool of workers willing and able to fill shortage roles.

5. Policies and strategies aimed at tackling labour shortages and their OSH implications

Policymakers at EU and Member State level have recognised that labour shortages present a serious challenge requiring coordinated action. The European Commission and Council put forward an agenda to tackle labour and skills shortages across the Union in 2024. The 2025 Union of Skills initiative (European Commission, 2025b) followed the Council of the EU-approved conclusions on 'Labour and Skills Shortages in the EU: Mobilising Untapped Labour Potential', highlighting political commitment to action (Council of the European Union, 2024) and the European Commission's action plan to tackle labour shortages (European Commission, 2024b). These initiatives address three key drivers: demographic change, the green and digital transitions that alter skill needs, and poor working conditions in specific jobs.

EU-level actions are centred on increasing the active labour force, upskilling and reskilling, and improving job quality and working conditions.

5.1 EU initiatives to address labour shortages

Activating underutilised labour: The EU is urging Member States to better integrate groups such as women, older workers, young people ‘not in education, employment or training’ (NEETs), and individuals with disabilities, into the workforce. This is in line with achieving the target set out in the European Pillar of Social Rights (EPSR) action plan of a 78 % employment rate for ages 20–64 by 2030. To reach this goal, flexible working arrangements and care infrastructure are emphasised, for example, improving access to childcare and care for older people so that more parents (especially mothers) can work. The ‘Demography Toolbox’ adopted by the Commission in 2023 outlines measures such as improving work-life balance, promoting lifelong learning for older workers, and harnessing the potential of migrants to mitigate demographic decline (European Commission, 2023b). Raising the pension age, as has been done in recent years in many EU countries, is an additional way to expand the active workforce.

Upskilling and reskilling (skills development): Following the 2023 European Year of Skills, the Commission’s 2024 action plan on labour shortages calls for updating education curricula and investing in vocational training aligned with labour market needs (European Commission, 2024b). Programmes like ‘Pact for Skills’ encourage partnerships in key sectors to train workers in the necessary skills (for example, automotive, microelectronics and health). The Recovery and Resilience Facility (EU post-pandemic funds) also provided many countries with resources to bolster digital skills training and vocational education.

Facilitating mobility and migration: The EU supports labour mobility through EURES, the European Job Mobility Portal, which shares job vacancies across countries and is working to reduce barriers to mobility (for example, easier recognition of professional qualifications across the EU). Additionally, to bring in skills from outside, the Commission has proposed Talent Partnerships with key partner countries (for example, in North Africa) to attract skilled migrants in sectors facing shortages in a mutually beneficial way. The Council conclusions explicitly mention ‘managed legal migration’ as a tool to help tackle labour shortages. Reforms to the Blue Card scheme (for highly skilled non-EU workers) and other migration directives are part of this effort. Several countries have programmes to attract sector-specific workers from outside the EU, for example nurses. While targeted migration can help reduce labour shortages, language barriers can increase OSH risks if not adequately addressed (Guldenmund, 2013).

Increasing attractiveness by improving job quality and working conditions: At EU level, there are indirect levers to promote better conditions in sectors experiencing labour shortages, and to enhance the attractiveness of the sector and/or job. For example, the EU has adopted directives on work-life balance and on transparent and predictable working conditions, which should improve job quality if properly implemented. Some EU funding (for example, through ESF+) is directed towards projects that improve working conditions or provide better training for harder jobs in partnership with social partners. For regulated professions, notably in healthcare and basic education, Member States’ governments have a direct influence on pay and working conditions.

5.2 The importance of OSH consideration in labour shortage responses

These policy frameworks to address labour shortages are welcome and needed. However, each of them **requires accompanying OSH policies, as well as a focus on how they themselves affect OSH** in various occupations, in order to achieve optimal impact.

An **ageing workforce** faces heightened susceptibility to certain risks. Older workers report more work-related MSDs and other chronic conditions after decades of exertion (Eurofound, 2025). For example, over 70 % of older healthcare workers (55+) experience highly physical job demands (such as heavy lifting). Another factor affecting older workers is an increase in heat-related stress.

Policies to activate NEETs must consider the higher injury rates among new entrants. **Younger workers (18–24)** in Europe have a >50 % higher rate of non-fatal work accidents than older workers (EU-OSHA, 2023). Inexperience, lack of training, and limited awareness of rights contribute to this elevated risk. Thus, large-scale youth activation or apprenticeship programmes need robust safety

training and mentoring. Without support, an influx of inexperienced staff could lead to more accidents, undermining the benefits of easing labour shortages.

There are similar concerns around **upskilling and reskilling**. Training with an adequate focus on OSH can improve working conditions and pay. However, in an environment of labour shortages, there may be a risk that safety concerns are not receiving enough attention. In **on-the-job training** (for example, learning to operate new machinery or retrofit buildings for energy efficiency), accidents can occur if supervision is inadequate. Evidence consistently links **inexperience to higher accident rates**, underscoring the need for rapid training programmes to establish a safety culture from the outset (EU-OSHA, 2023). Any **mismatch of skills**, where workers end up in roles without sufficient training, increases the risk of unsafe work practices. For instance, if a hastily retrained worker is placed in a technical job they only partially understand, the likelihood of errors and accidents increases.

Labour mobility, whether through EU free movement or the recruitment of third-country nationals, often exposes workers to **varying safety standards**, and perhaps **different perceptions of working conditions and OSH** (Cremers, 2016). Additionally, if migrant workers increasingly fill jobs that local workers avoid, there is a risk of underrepresentation of workers' voices in these occupations. Language issues pose another barrier, and safety regulations may not be accurately codified in translations (Guldenmund, 2013). For example, a construction worker posted to another country might not receive the same safety briefing as local crews. This creates a risk that mobile workers become a '**second tier**' **workforce in terms of health and safety**. Language and employment relations – for example, posted workers – may also hinder regular access to OSH training (Danaj et al., 2020). Moreover, the outflow of healthcare staff from low- and lower-middle-income countries to wealthier economies may **deepen global inequities**, as the originating countries are projected to face a shortfall of around 18 million health workers by 2030 (WHO, 2016).

While many effects of labour shortages on OSH are adverse, there are also **potential positive impacts**. A tight labour market can drive improvements in job quality, including safety and health conditions, as workers gain **leverage to avoid hazardous jobs or demand better pay and working conditions**. Labour shortages can put pressure on the worst jobs to improve or be weeded out – workers vote with their feet, moving away from employers with poor OSH records (Zwysen, 2024 (EU); Aeppli, 2022 (US)). Moreover, in a tight labour market, individual workers may feel less fear of retaliation if they **speak up about safety** or even refuse dangerous assignments.

Importantly, for this process to be effective, workers' agency is crucial, whether individually or through union representatives. If workers increasingly consider OSH aspects when seeking employment, companies that provide adequate and safe working conditions will benefit more. Such a **self-improving mechanism** does not apply to the self-employed segment of the labour market, including platform workers. Improving job quality also means addressing workers in non-traditional employment. Many **sectors with labour shortages (transport, care, services) are increasingly supplemented by platform workers or independent contractors**. However, EU OSH directives or national OSH laws generally do not cover self-employed workers, leaving a protection gap (Lenaerts et al., 2022), though the EU Platform Work Directive aims to improve this situation when implemented, most importantly by establishing a presumption of employment under specific circumstances, to avoid platforms shifting responsibility for safety onto individuals. Any comprehensive effort to improve working conditions must find ways to extend OSH protections to these workers, either by clarifying their employment status or through innovative measures (such as requiring platforms to contribute to shared insurance or a training fund).

A **proactive OSH lens can also expand the effective labour supply**. Firms that invest in injury prevention, ergonomic redesign and well-being programmes see lower sickness absences and staff turnover, freeing up scarce workers for productive hours and lengthening careers (EU-OSHA, 2019). Improving OSH in general can, therefore, expand the effective labour supply. In 2022, around 3 million non-fatal accidents at work (Eurostat, 2025c) generated more than 50 million working days of absence in the EU (roughly 250,000 worker years). A 10 % reduction in accident-related absence would free up roughly 25,000 worker years across the EU. In addition to this number derived from accident statistics, there would be a reduction in absences due to reasons other than accidents (such as stress and burnout). Furthermore, the OSH Barometer made available by the European Agency for Safety and Health at Work (EU-OSHA) shows the number of cases of diseases and injuries caused by work, highlighting that, for the EU27, injuries account for 16.9 % of DALYs, while cardiovascular diseases account for 9.3 % (which are aggravated due to long working hours and thus highly pertinent in the

case of shortages, as explained above)¹. In addition, improving working conditions, including OSH policies, is key to attracting young workers to the health and long-term care sectors and to keeping nurses and other health personnel from leaving the sector, particularly older workers (de Vries et al., 2023).

When Member States allocate ESF+ or RRF funds for upskilling and reskilling, a dedicated envelope for workplace prevention, including both physical and psychosocial aspects, could yield high social returns and support the Union of Skills agenda (European Commission, 2021a). Public procurement can reinforce this by awarding contracts on 'best price-quality ratio' criteria that weight certified OSH performance (European Commission, 2021b).

6. Concluding remarks

Labour shortages are becoming a structural problem in many occupations and sectors, and the ongoing transitions – demographic ageing, digitalisation and AI, and the green transition – could exacerbate shortages in the coming years. There are clusters of shortages in healthcare, ICT and skilled trades, but nearly every sector is feeling the squeeze. When jobs remain unfilled, workloads, pace and irregular hours increase, amplifying musculoskeletal, accident and psychosocial risks, while potentially crowding out prevention activities. At the same time, OSH itself acts as a structural driver: sectors with chronically poor safety and health records tend to experience the most persistent shortages. This has the potential of **creating a vicious circle of labour shortages and deteriorating OSH**. However, **scarcity also offers a way to improve working conditions and OSH**. Establishments with robust OSH policies and practices and decent conditions can retain staff more easily and attract new entrants. In other words, **prevention helps convert a latent labour reserve**, such as older workers, career changers, or people with disabilities, into effective labour supply.

Policies to mitigate labour shortages carry additional OSH risks if not designed correctly, or if they are implemented in haste. From a public policy perspective, it is essential to consider OSH as a labour supply instrument rather than a cost issue.

Robust prevention that keeps existing staff healthy, helps injured workers return earlier, and makes room for underrepresented groups in the labour market can address scarcity through **four mutually reinforcing channels**:

- Safer and more supportive workplaces improve retention because fewer workers quit or retire early due to health reasons.
- Better working conditions, including OSH, enhance a sector's image and attract a wider pool of applicants.
- Age-sensitive design and focused rehabilitation enable older workers to remain active for longer, effectively extending working lives.
- Structured safety training enables newcomers to reach full productivity more quickly without increasing accident rates, thereby shortening the onboarding and reskilling cycle.

To minimise the risk of labour shortages leading to increased OSH risks, OSH actors should expand their areas of focus:

• **OSH practitioners:** Ensure risk assessments explicitly account for understaffing, fatigue and pace risks, and allow time for safety training and onboarding (such as keeping buddying programmes intact). Pay attention to and monitor psychosocial risks, enforcing breaks and using simple tools (for example, statistics on overtime and absence) to spot overload early. Where feasible, deploy assistive and ergonomic technologies to reduce strain.

• **Workers' representatives:** Establish chronic understaffing as an OSH hazard. Ensure that voluntary measures to reduce understaffing (such as voluntary extra overtime) stay voluntary. Ensure meaningful

¹ DALY stands for disability-adjusted life year, which is a measure of overall disease burden, representing a year lost due to ill health, disability or early death.

participation in risk assessments and change processes, protect the right to refuse unsafe work, and use a tight labour market to secure job quality improvements that retain people.

- **Employers and employer bodies:** Compete on job quality, better pay, predictable schedules, ergonomics and clear career paths. Monitor cases with missing safety checks or risk assessments, PPE or maintenance. Strengthen training, supervision and documentation for new or reassigned workers. Increase sector-level training opportunities where possible, to reduce costs for companies that prioritise training and spread knowledge of good and less good safety practices. Cultivate an open safety culture that encourages speaking up. Employers' organisations should focus on addressing limited awareness of the business case for OSH, insufficient support for SMEs (funding, guidance), and underuse of metrics and benchmarking on burnout, turnover and injuries.

- **Policymakers (EU/national):** Mainstream OSH in labour shortage strategies with measurable targets (such as reductions in lost time injury and burnout rates in shortage occupations). Carefully consider the economy-wide benefits of OSH improvements when investing in labour-inspection capacity and skills. Leverage public procurement and social dialogue to disseminate good practices and improve data and evaluation linking OSH to retention.

- **Labour inspectorates:** Target inspections where shortages are most acute, checking working time, training and supervision, and ensuring that no corners are being cut. Issuing practical guidance and checklists for managing OSH under reduced staffing and building capability to assess psychosocial risks. Collaborate with social partners and other government agencies, and use data to prioritise inspections and communicate systemic issues.

To conclude, good OSH policies are not merely a social imperative; it is part of the productivity toolkit needed to navigate demographic and technological transitions. Therefore, any EU or national action plan on labour shortages should include measurable OSH targets, for example reducing lost time injury rates in shortage occupations by a certain percentage within five years, and earmark a share of funding for company-level prevention projects. OSH policies alone cannot alleviate labour shortages, but **embedding such objectives will help turn today's shortages into a virtuous cycle of safer work**, higher labour market participation and stronger productivity.

Authors; Mikkel Barslund, Karolien Lenaerts, Research Institute for Work and Society (HIVA), KU Leuven, Belgium

Project Management: Annick Starren, European Agency for Safety and Health at Work (EU-OSHA).

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