
International Labour Organization

Safety in numbers

Pointers for a global safety culture at work

Geneva, 2003

International Labour Office Geneva

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Foreword

The ILO's decent work agenda reflects the aspiration of women and men to live and work in dignity. Work is central to people's lives, to the stability of families and societies. People want work that gives them and their families an acceptable standard of living; work where they have a voice and where their fundamental rights are respected. They want some protection when they cannot work as well as protection from disease and injury at work.

Decent work is safe work but we are a long way from achieving that goal. Every year some two million men and women lose their lives through accidents and diseases linked to their work. In addition, workers suffer 270 million occupational accidents and 160 million occupational diseases each year - these are conservative estimates.

These figures speak of dreadful human loss, pain and suffering. Yet awareness of the problem is still too low. Why? Perhaps it is because these incidents are dispersed. A few dramatic cases receive public attention. But the everyday reality of the majority who die, fall ill or are injured from work-related causes is largely unnoticed.

Taken together these incidents constitute a social phenomenon and the world has an obligation to act. Inaction carries a high human cost. Inaction also carries an economic price. And enterprises and workers know that it adversely affects productivity. Work that undermines business efficiency while disregarding the safety and health of workers cannot be the basis of a sustainable development strategy.

The ILO does not accept that injury and disease go with the job. Fatalities, accidents and illness at work are highly preventable. We use our global reach to promote a safety culture in the workplace - wherever work is done - backed by appropriate national policies and programmes. Through our standard-setting activities, the development of guidelines and codes of practice as well as through international collaboration and cooperation, we provide reference points for action, practical instruments and assistance to make workplaces safer.

On the World Day for Safety and Health at Work, we put the spotlight on promoting safety at work. This Report sets out the challenges that we face and points the way ahead. Awareness must be accompanied by engagement and action. Working together with our constituents and other relevant actors, the ILO looks forward to being part of a renewed effort to promote safe work world wide.

Juan Somavia
Director-General
International Labour Office

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1. Safety in numbers

About two million people are killed by their work every year.

This is a global figure, drawn from the ILO's most recent estimates.

Massive though they are, these deaths are just part of the problem. An estimated 160 million people on this planet have work-related diseases. In one third of these cases, the illness causes the loss of 4 or more working days. Meanwhile, the number of work accidents worldwide, fatal or non-fatal, is put at 270 million a year.

Fatalities are not fated.

Accidents don't just happen.

Illness is not random.

They are caused.

Most of the world's work-related deaths, injuries and illnesses are preventable.

That message has to be put across. On 28 April, the World Day for Safety and Health at Work gives all of us a special chance to do so.

Every country, every town, every village commemorates its war dead. So why not set aside a day of tribute to all the men, women and children who fall victim to their work? And why not use it to highlight the urgent need for better workplace health and safety?

From this simple idea, in 1989, American and Canadian workers developed a memorial day for their dead and injured colleagues. Held each 28 April, the event spread rapidly. Now, it is observed in almost one hundred countries. This globalization of the memorial day has been vigorously promoted by the labour movement, and in particular by the International Confederation of Free Trade Unions (ICFTU).

The ILO, which has long supported the commemorations, has now officially joined them. It wants to add a particular ILO strength – tripartism. In other words, co-operation between governments, employers and workers, meeting as equals.

Safety pays. The ILO is convinced that the highest occupational health and safety standards worldwide are in the best interests of every worker, every employer and every nation.

We can back that statement with figures. So, as part of our contribution to 28 April, we have assembled our main arguments in this one short, easily read publication. For those who want more detail, we give references for further reading. For those – in business, in government, in the unions – who need to take the right decisions fast, *Safety in Numbers* gives the main facts:

- **The challenge.** Our estimates of work-related deaths, injuries and diseases worldwide. The biggest killers. Regional trends. Sectors most at risk. And how we arrived at the figures.

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- **Safety pays.** Why lean safety is a false economy. Worker health, national wealth. Safe-working countries compete better. Safety and companies' bottom line.
 - **A global safety culture.** Enterprise management and commitment are key. The stronger the union, the safer the workplace. Local action, global framework. ILO standards on safety and health. Decent work is safe work.

Hard facts, often very hard facts, are the best foundation for social dialogue on these vital issues. But we are well aware that the biggest cost of all cannot be expressed in figures.

Work-related deaths, injuries and diseases cause immense human suffering to the victims and their families. Behind the statistics lie deeply personal tragedies, but the costs and the solutions rest with society as a whole.

We must all strive for decent, safe work worldwide. And we must do it together. Truly, there is safety in numbers.

2. The challenge

2.1 Extent of the problem

Reducing the world's immense workplace accidents and disease is a major challenge. To tackle it effectively, we first need to know the extent of the problem.

This is not easy. Many occupational deaths and injuries are never reported. Even where statistics do exist, they may be compiled in different ways. And, of course, the countries with the highest accident and illness rates are unlikely to be those with the best-developed inspection and reporting structures.

Nonetheless, the ILO has taken on the task of producing the best possible global statistics on occupational health and safety.¹ Its findings are summarized in this section. Of necessity, they include estimates, but the underlying assumptions are valid.

Indicators for death, disability and disease at work can measure various factors. The outcome indicators include the number of fatal and disabling accidents, occupational diseases (100% work-related and often compensated) and work-related diseases (less than 100% caused by work), absenteeism, disability pensions and loss of working capacity. These may be also linked together, for example when estimating the disability adjusted life years (DALY's).

As we go along, we will explain how we arrive at the figures presented.

2.2 Deaths: 2 million a year

According to the latest ILO projections - for the year 2000, based on 1998 statistics - there were altogether 2 million work-related deaths annually.

Global work-related deaths were estimated using attributable fractions of work-related mortality due to specific disease categories and injuries. These attributable fractions are based on data about existing exposures to known factors of work-related diseases and their proven impact on death rates due to these diseases, in particular, in industrialized countries.

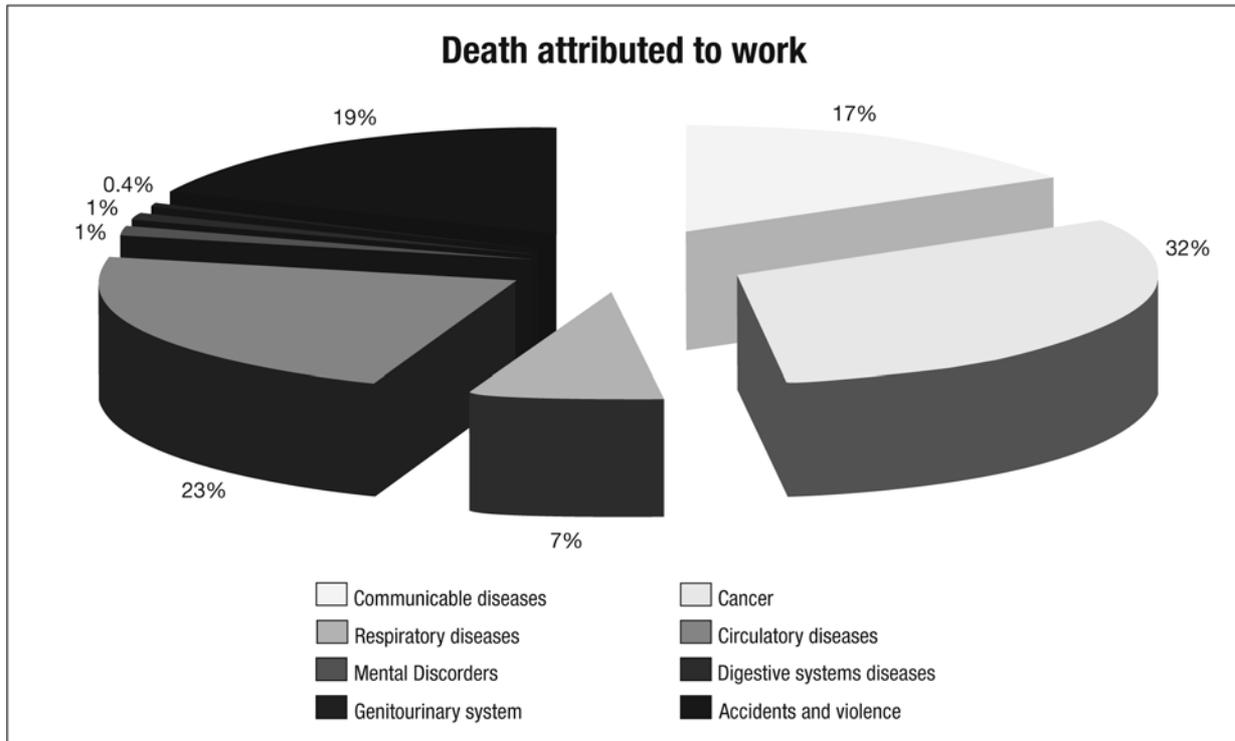
Such studies have not been carried out - or only to a limited extent - in developing countries. However, the exposure/disease relationship is expected to be largely consistent with that in industrialized countries, although a few exceptions may exist, such as skin melanoma, which is much more prevalent in workers who are more sensitive to extensive UV radiation exposure.

All in all, the human body reacts in much the same way anywhere in the world, and most work processes are equally universal. Nor, in most cases, are there any major differences between male and female responses to the main factors governing workplace health and safety. Nonetheless, a number of regional, sectoral and gender factors do influence work-related mortality. These are explained below. They were taken fully into account when arriving at the global figure for fatalities. Amongst other things, regional weighting factors were used (i.e. the ratio between occupational deaths in high- and low-income countries). These were drawn from the work-related mortality figures in the World Health Organization's report *Global Burden of Disease*.² In middle-income areas, such factors may be expected to balance each other out, and the same attributable fractions were therefore used as for high-income countries.

On the same basis, the ILO went on to estimate the percentage contribution of different causes to the two million deaths per year.

The results are summarized in *Fig. 1*.

Figure 1. Main causes of occupational fatalities worldwide.



Source: ILO SafeWork.

As may be seen, the four biggest killers are:

➤ **Work-related cancer (32 per cent)**

Main contributing and preventable factors:

- asbestos
- carcinogenic chemicals and processes
- ionizing radiation and radioactive materials, radon, UV radiation
- silica and other carcinogenic dusts
- environmental tobacco smoke (passive smoking) at work
- diesel engine exhaust.

➤ **Work-related circulatory diseases (23 per cent)**

Main contributing and preventable factors:

Cardiovascular diseases

- shift work and night work, long hours of work (including death by overwork, sometimes known as *karoshi*)
- job strain caused by high demands and low decision-making latitude, resulting in hypertension and high level of "stress hormones", for example in bus drivers
- noise
- high risk to injury
- chemicals, such as carbon disulphide, nitroglycerin, lead, cobalt, carbon monoxide (foundries, traffic controllers), combustion products, arsenic, antimony
- environmental tobacco smoke at work.

Cerebrovascular diseases

- shift work
- environmental tobacco smoke at work.

➤ **Occupational accidents (19 per cent)**

Main contributing and preventable factors:

- lack of company/enterprise safety and health policy, structure, worker/employer collaborative mechanism, lack of occupational safety and health management system
- poor safety culture
- lack of knowledge, available solutions, awareness, information centres
- lack of or poor government policies, lack of or poor legal enforcement and advisory system, lack of or poor tripartite cooperation
- lack of incentive-based compensation system (experience rating)
- lack of or poor occupational health services
- lack of research and proper statistics for priority setting
- lack of effective training and education system at all levels.

➤ **Work-related communicable diseases (17 per cent)**

Main contributing and preventable factors:

- infectious and parasitic diseases (malaria, viral and bacterial diseases, schistosomiasis, tse-tse flies, zoonosis, severe acute respiratory syndrome (SARS) ...)
- poor-quality drinking water, poor sanitation
- poor hygiene, lack of knowledge.

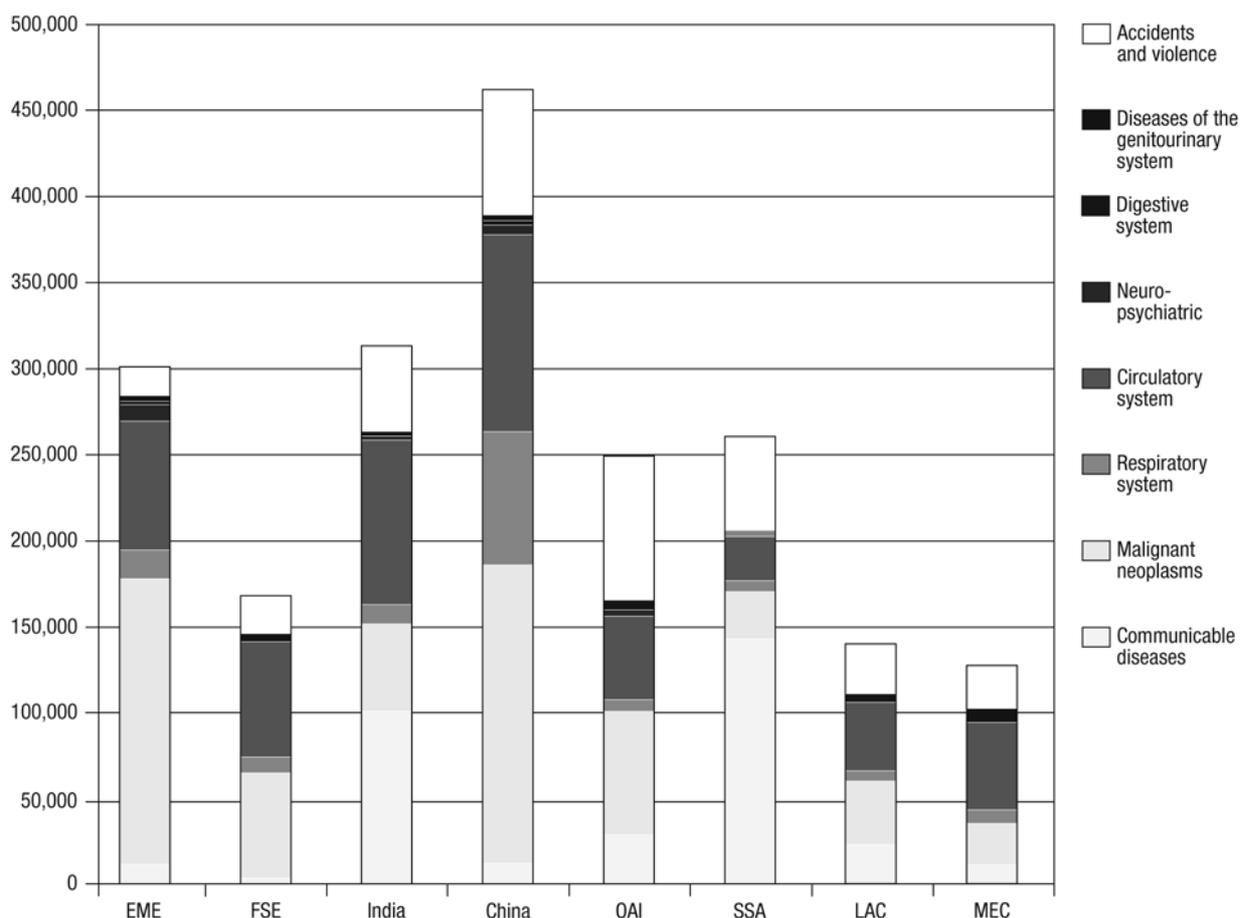
Note: incidents involving dangerous animals, snakes and insects are usually recorded under *accidents*.

2.3 Regional trends

Problems different in the world regions

The percentages above are for the whole world. When looking at the distribution of the numbers in different world regions (World Bank classification) the picture is quite different, as can be seen from Figure 2. In *Established Market Economies (EME)* work related cancer is the main problem while the Chinese work related cancer cases are also high, probably due to the use of asbestos and passive smoking at work. Accidents are the biggest component in *Other Asia and Islands (OAI)* and rapidly growing in China. China has the biggest number of respiratory diseases due to mining. Work-related circulatory diseases are a major factor in the *Formerly Socialist Economies of Europe (FSE)* and in the *Middle Eastern Crescent (MEC)*. India and Sub-Saharan Africa are, in particular, suffering from work-related communicable diseases, *Latin America and the Caribbean (LAC)* demonstrates the prevalence of all key problems while cancer and circulatory diseases lead the mortality. The figures below are absolute numbers of fatalities.

Figure 2. Fatalities caused by occupational accidents and work-related diseases in world regions



Source: www.ilo.org/safework.

The burden of occupational accidents and diseases is by no means evenly spread across the globe. As may be seen from *Fig. 2a*, fatalities are proportionately much higher in some regions than in others. A country-by-country analysis would reveal even greater variations. Fatality rates in some European countries are twice as high as in some others. In parts of the Middle East and Asia, fatality rates soar to four times those in the safest industrialized countries.

Fig. 2a: Fatalities caused by work-related diseases and occupational accidents, year 2000

	Economically active population	Total employment	Global Estimates Total Work-related Fatalities	Global Estimates Fatal Accidents	Fatal accidents reported to the ILO
ESTABLISHED MARKET ECONOMIES	409'141'496	380'833'643	297'534	16'170	14'608
FORMERLY SOCIALIST ECONOMIES	184'717'127	162'120'341	166'265	21'425	8'665
INDIA	458'720'000	419'560'000	310'067	48'176	211
CHINA	708'218'102	699'771'000	460'260	73'615	17'804
OTHER ASIA AND ISLANDS	404'487'050	328'673'800	246'720	83'048	5'631
SUB-SAHARAN AFRICA	260'725'947	10'540'604	257'738	54'705	1'675
LATIN AMERICA AND THE CARIBBEAN	193'426'602	114'604'962	137'789	29'594	6'998
MIDDLE EASTERN CRESCENT	112'906'300	48'635'240	125'641	28'019	1'876
WORLD	2'732'342'624	2'164'739'590	2'001'717	354'753	57'468

Source: www.ilo.org/safework

There are contrasts, too, in the underlying trends. On average, the rates of occupational fatalities, accidents and illness are declining in the industrialized countries. In the developing and newly industrializing nations, the number is steady or rising.

The reasons for this difference are complex. Certainly, better prevention and better emergency facilities have played an important part in bringing the rates down in the industrialized countries. But so has the export of dangerous jobs. Much of the world's most hazardous work is no longer performed in the older-established industrial countries.

In the industrialized economies, the nature of occupational ill-health is changing. There are fewer physical injuries, but ailments related to stress and overwork are on the increase.

Among the regional factors of which the ILO takes account – particularly when estimating exposure levels - are the following:

- Many production processes are considerably more labour-intensive in developing countries than in industrialized countries. The number of exposed workers therefore tends to be higher in the developing countries.

- Temperatures and other climatic conditions are usually more demanding in developing countries. However, open production space, missing or limited walls and better natural ventilation in production facilities are more common in warmer, low-income countries.

-
- Knowledge and awareness of hazards, and consequently prevention levels, are significantly lower in low-income countries.
 - Less sophisticated machinery and equipment, with lower energy consumption levels, are used in developing countries.
 - Some minerals and chemicals have been used less in developing countries in the past (such as asbestos and industrial chemicals). While this pattern is changing, some others are used more (pesticides) and without proper control measures.
 - Industrialized countries are more likely to have round-the-clock production and services. This increases shift and night work in high-income areas.
 - Communicable diseases at work (malaria, hepatitis , viral and bacterial infections...) are considerably more prevalent in low-income countries than in middle- and high-income economies.
 - Due to shorter average life expectancy in low-income countries, diseases that have a long latency period and appear later in working life or after retirement, such as work-related cancer and circulatory diseases, have not surfaced as a major concern. However, there is a potential for rapid increase of such diseases as the general health care system improve and life expectancy grows.

There is some evidence that industrialization initially causes a rise in occupational casualties. The creation of new roads, infrastructure, telecommunications and factories rapidly increases the rate of accidents, both fatal and non-fatal. So does the sudden introduction of untrained workers into industrial jobs and cultures that are completely new to them.

In newly industrializing countries, such figures will tend to go on rising until a plateau is reached. Gradually, prevention policies and programmes will then gain momentum. These will begin to have a positive impact on accident rates, as will a structural shift towards service industries. However, part of the rapid increase in accident figures during industrialization may be due to better recording. Rural and informal working populations are usually beyond the reach of protection, inspection and compensation structures. Industrial and service sectors are better covered, and thus record more realistic figures.

2.4 Non-fatal diseases: 160 million a year

British (1998)³ and Finnish (2000)⁴ surveys on self-reported work-related illnesses concluded that 7.3 per cent and 8.3 per cent respectively of those in employment report annually one or more work-related illness that causes absence from work. In the world population – provided that workers are not healthier in other parts of the world – this would mean that some 184 to 208 million workers suffer from work-related diseases. About 2.3 per cent of those employed or 58 million workers suffer from illnesses that cause 4 days or more absence from work. The European Union survey concluded that 5.4% of the workers suffer from health disorder caused or aggravated by their current or past employment⁵. Taking into account the under-employment and those who are currently unemployed but suffering from a work related health disorder caused by past employment, a world estimate of **160 million** is reasonable.

2.5 Accidents: 270 million a year

Injuries caused by work-related accidents lead to fatalities only when a number of contributing factors co-exist simultaneously. Depending on the type of job, some 500-2,000 smaller injuries take place for each fatality.

On this basis, the ILO's estimate of the total number of work accidents worldwide, fatal or non-fatal, is 270 million a year.

Although fatal occupational injuries caused by accidents are placed third when looking at the main reasons for deaths at work, there are aspects that must be kept in mind:

- Fatal accidents usually occur to workers who could still have had a long working career ahead of them, and some happen to young and inexperienced workers. An estimated 12,000 working children die annually. These deaths thus cause the loss of a large number of lives and working years. In contrast, both work-related cancer and work-related circulatory diseases tend to occur quite late in working life, or indeed after retirement. So the loss in real terms is profound.

- While some work-related diseases have a number of contributing factors that are difficult to eliminate, such as genetic and inherited sensitivities, occupational accidents are all caused by preventable factors within the workplace. This has been demonstrated by continuously reduced accident rates in industrialized countries. Many companies and some governments have already adopted zero accident targets. So practically all accidents can be eliminated by a set of known measures. If all ILO member states used the best accident prevention strategies and practices that are already in place and easily available, some 300,000 deaths (out of total 360,000) and 200 million accidents (out of 270 million) could be prevented, not to mention the savings in compensation payments (*see the next chapter – Safety Pays*). Much of the steady reduction in the number of work-related accidents in the industrialized countries has been mainly due to workforce cuts in high-risk sectors. While there are fewer workers in dangerous jobs in these countries, the injury rates among such workers may be still high. For example, fatal logging injuries in mountain areas of the US state of North Carolina are 15 times higher than the construction industry fatality rate in developing countries.

- Another reason for the reduction in fatal accidents in high-income areas is greatly improved first aid, rapid transport to hospitals and good emergency care. Thus, the fewer deaths in these countries do not necessarily reflect a reduction in the number of serious accidents.

- Work-related violence is responsible for a growing proportion of work injuries.

Injuries caused by accidents lead to fatalities only when a number of contributing factors co-exist simultaneously. Fatal accidents are just the tip of the iceberg. Depending on the type of job some 500-2,000 smaller injuries take place for each fatality. Studies in the United States⁶ and in Finland⁷ show that for every fatal accident there are more than 1,000 occupational injuries resulting in 3 or more days of temporary incapacity. In Germany,⁸ the ratio is 1:1200 and for injuries that cause one day or more absence from work the ratio is 1:2400. The ratio between a fatality and an injury requiring first aid is 1:5000. Near-accidents or dangerous occurrences are much more frequent. For every fatality, 70,000 near-accidents take place. It is, however, these large number of disruptions that cause the losses of productivity. Furthermore, to reduce the number of accidents, continuous and systematic action to eliminate the factors behind these 70,000 occurrences is required. Any one of them may lead to a more serious outcome when a number of contributing factors are simultaneously present.

2.6 Globalization

Concerns have been expressed that the globalization of the economy may exacerbate some of the factors contributing to casualties and ill-health at work. Factors related to globalization such as the acceleration and liberalization of world trade and the spread of new technology are generating new types of work organization and thereby new patterns of exposure to the risks of occupational accidents and disease. Some parts of the globe clearly benefit from more opportunities, and new and better workplaces. Indeed through globalization pressures can be created to improve safety and health. However, some other parts of the globe tend to see the negative consequences.

As the large multinational enterprises continue to merge into a smaller number of global conglomerates to form the engine of the global economy, SMEs are recognized as the engines of local economy and the major source of present and future employment in all countries. In response to the demands for flexibility made by globalization forces, many large companies concentrate on a few specialized core areas and abandon others. Outsourcing and subcontracting of such activities by the larger multinational enterprises has led to the establishment of high number of micro-enterprises, small and medium-sized enterprises and self-employed contractors and workers.

Occupational hazards and risks are more widespread in SMEs than in large enterprises because the resources and technical capacity of SME's are limited. In developing countries most are not yet properly covered by safety and health legislation and a large number of them operate in the informal economy outside of any coverage by the formal occupational safety and health or inspection services. The situation is particularly poor in agriculture.

These facts, coupled with poor reporting systems of occupational accidents and diseases, tend to hide the reality of growing workplace hazards. We should remember that official accident figures do not reflect the real situation in developing countries.

2.7 Psychosocial factors and emerging issues

Stress is a major factor causing both accidents and physical diseases. It may also stimulate alcohol and drug abuse and workplace violence. In many parts of the world, these may be linked to the spread of HIV/AIDS.

Passive smoking is a newly recognized major health problem at work. According to one estimate, mortality from occupational exposure to environmental tobacco smoke (passive smoking at work) causes 2.8 per cent of all lung cancers⁹. The attributable fraction of deaths from passive smoking at work was 1.1 per cent for chronic pulmonary disease, 4.5 per cent for asthma, 3.4 per cent for ischemic heart disease, and 9.4 per cent for cerebrovascular stroke. This totals about 200,000 fatalities - roughly 14 per cent of all work-related deaths caused by disease.

2.8 High-risk sectors

The main elements governing workplace health and safety are common to many or all sectors. These factors include chemical substances; dust, fibres and air pollution; noise and vibration; fire; radiation; and ergonomic considerations such as lighting and the design of equipment and tasks.

No sector is safe. But some are particularly dangerous.

■ **Agriculture** is one of the three most hazardous sectors, in both industrialized and developing countries. Moreover, it currently employs about half of the world's labour force – roughly 1.3 billion people. The ILO estimates that up to 170,000 agricultural workers are killed each year. This means that workers in agriculture run at least twice the risk of dying on the job as compared with workers in other sectors. Agricultural mortality rates have remained consistently high in the last decade, while in most other sectors fatal accident rates have decreased. Millions of agricultural workers are seriously injured in workplace accidents with agricultural machinery or poisoned by pesticides and other agrochemicals. In fact, due to the widespread under-reporting of deaths, injuries and occupational diseases in agriculture, the sector is probably even more dangerous than the official figures suggest.¹⁰

■ **Mining** accounts for only about 1 per cent of the global workforce, but it is responsible for up to 5 per cent of fatal accidents at work (at least 15,000 per year, or over 40 each day). No reliable data exist as far as injuries are concerned, but they are significant, as is the number of workers affected by occupational diseases (such as pneumoconioses, hearing loss and the effects of vibration) whose premature disability and even death can be directly attributed to their work. Despite considerable efforts in many parts of the industry to improve its safety record, mining remains the most hazardous occupation in most countries where it exists, when the number of people exposed to risk is taken into account.¹¹

■ In the **construction** industry, at least 60,000 people are fatally injured on building sites every year. Many hundreds of thousands more suffer serious injuries and ill-health. In fact, these estimates are conservative. In many countries, less than 20 per cent of construction injuries are reported, and little account is taken of the longer-term impact of occupational diseases. The main causes of fatalities in the sector include falls, fatal crush injuries and the impact of falling objects, and electrocution. Major health problems range from deafness to vibration syndromes, back injuries, other musculoskeletal disorders, and exposure to hazardous substances (solvents, isocyanates, pesticides in timbers, chemical treatments for damp courses, fire retardants, welding fumes) and to dust and fibres (cement dust, silica, wood dust, fibreboard and, worst of all, asbestos). Stress is a frequent problem brought on by the other factors, notably the fear of falling. Construction workers tend to live away from home in substandard accommodation, especially in the developing countries. Tuberculosis, cholera, dengue, malaria and HIV/AIDS can therefore pose particular risks.¹²

■ **Fishing** is amongst the most dangerous industries in many countries. In Australia, between 1982 and 1984, the fatality rate for fishermen was 143/100,000 person-years compared to 8.1/100,000 generally. In Denmark, from 1989 to 1996, the rate was 25-30 times higher than the rate for those employed on land. In the United States in 1996, the death rate was estimated at eight times that of persons operating motor vehicles for a living, 16 times higher than such occupations as fire-fighting and police work and over 40 times the national average. In China, over 400 fishermen are reported killed in accidents each year. In Tunisia in 1994, the fatality rate in the fishing industry was double the national average.¹³

■ **Shipbreaking** is also particularly hazardous, not least at the Asian beachheads where much of the work is now done. Workers' safety is jeopardized by the absence of basic precautions, work planning and training. A number of potential risks are posed by the absence of norms about the condition that a vessel should be in when it arrives for scrapping. These hazards include heavy exposure to toxins and other dangerous substances, notably carcinogens. The workforce, often migrants, usually live in inadequate facilities on or near the site. Noise, poor sanitation and general exposure to pollution from the site have short- and long-term health implications. Low reporting standards mean that the health and safety statistics for this sector are erratic and unreliable.¹⁴

■ Workers in the **informal sector both urban and rural** face major safety and health problems. Definitions of this sector vary. It covers a wide range of precarious jobs, mainly in developing countries, in which the worker does not have any formalized relationship with an employer. Some of the tasks are inherently hazardous – for example, the manual collection and recycling of waste. More generally, informal workers tend to have a poor working environment and very unsatisfactory welfare facilities. As occupational health services are virtually non-existent, meaningful safety statistics are a rarity. However, the injury and illness rates are at least the same or higher than in the formal sector¹⁵. Often, informal workers' cramped living spaces are also their workplaces. They and their families are therefore continuously subject to occupational hazards and pollution. The informal sector has grown at unexpected speed. According to a recent ILO report¹⁶, it now accounts for about half of the workers in the world. In some countries, such as Bangladesh, Mali, Nepal and Pakistan, it represents 70 per cent of total employment. Over the past decade, it is estimated to have created over 90 per cent of the new jobs in Africa. The lack of legal and social protection, representation and rights at work which characterizes informal employment is prevalent in many countries, the ILO says, and is an inherent part of the current path of globalization. The report stresses that, unless the root causes of informality are addressed, there can be no sustainable move towards recognized, protected, decent work. It sets out an integrated strategy to deal with these causes.

Even within sectors, some jobs are more dangerous than others.

The ILO has produced a series of International Hazard Data Sheets for specific occupations.

2.9 Gender

With the exception of agriculture, the world's most hazardous sectors and occupations have predominantly male workforces. Worldwide, the ILO estimates that some 80 per cent of work-related fatalities are suffered by men. In high-income countries, this figure is 86 per cent. In low-income countries, where communicable diseases are much more common and agriculture is a proportionately bigger employer, the difference between work-related male and female fatality rates is likely to be smaller.

Recent household surveys carried out in several countries indicate that, in traditional agriculture, the accident and disease rates are more evenly distributed between the sexes. In particular, those outcomes that cause long-term disabilities and absences from work, such as musculo-skeletal disorders, are more common in female workers than in males. These jobs are often linked to low salary levels. The majority of women agricultural workers are found in the developing countries. They are often assigned the most hazardous tasks, such as mixing or applying harmful pesticides. Frequently, they do not receive adequate protection and information. The result is poisoning and in some cases death. Heavy work during crop cultivation and harvesting can lead to a high incidence of stillbirths, premature births or the postnatal death of the child and/or the mother.

The proportion of women employed in the world's industrial and service sectors has increased rapidly over the past two decades. In many countries, women now constitute about 50 per cent of the workforce, and may soon be in a majority. Women also now have greater access to "untypical" occupations. This has implications for occupational safety and health services, which in the past have tended to base its assumptions on the average male.

However, there is still a high degree of segregation in practice between "men's jobs" and "women's jobs". This also influences exposure to particular occupational hazards. For example, the high proportion of women among the healthcare workers who suffer back injuries is related both to the nature of the work and to the concentration of women

workers in nursing. A higher rate of stress-related illness among women may also be due to the types of work involved. They are predominantly employed in high-speed, repetitive tasks that give no scope for decision-making and creativity. For the same reason, repetitive strain injuries are also frequent among female industrial workers. A further factor is the dual workload that is most often placed on women – at the workplace and in the home.

For the most part, there is no great difference between men's and women's biological response to physical, biological or chemical hazards. Nor is the average strength of men very different to that of women.¹⁷ Recent gender-oriented research on occupational health and safety has tended to demonstrate that differences among working populations are based mainly on individual human variability, rather than on biological differences between the sexes.¹⁸

Generally, a job that is unsafe for one sex will be unsafe for the other.¹⁹

2.10 Child labour

Worldwide, the ILO puts the number of working children, aged 5 to 14, at 250 million. Nearly half - about 120 million - are working full-time. Many of them are in hazardous and exploitative jobs, notably in agriculture, mining and quarrying, brick-making, carpet-weaving, construction, tanning, deep-sea fishing, match and firework production, domestic service, prostitution and pornography, and armed conflicts.

The younger the child, the more vulnerable he or she is to hazards at the workplace and to economic exploitation. ILO survey results show that in some areas, up to 20 per cent of child workers are under the age of ten. Girls are found in some of the worst kinds and conditions of work. Employment of child labour is in most cases illegal. Many children's workplaces are therefore semi-clandestine, and are inherently unsafe and unhealthy, even for adults.

The ILO's definition of the "worst forms of child labour", to be eliminated as a matter of urgency, includes "work which, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children."²⁰

2.11 HIV/AIDS

Over 42 million people around the world are infected with HIV. Of these, the ILO estimates that at least 26 million are workers aged 15 to 49, in the prime of their working lives. The effects are therefore felt by enterprises and national economies as well as workers and their families. The ILO anticipates that the labour force in high-prevalence countries will be between 10 per cent and 30 per cent smaller by 2020 than it would have been without HIV/AIDS. The epidemic cuts the supply of labour, with a resulting loss of skills, training and experience. At the same time, labour costs are rising due to sickness and absenteeism.

HIV/AIDS strikes hard at the most vulnerable groups in society, including the poorest of the poor, women and children, exacerbating existing problems of inadequate social protection, gender inequalities, and child labour. There are also certain types of work situations which are more susceptible to the risk of infection than others according to the ILO Code of Practice on HIV/AIDS and the World of Work, although it also points out that the main issue is one of behaviour, not occupation. This may include work involving frequent or long-term stays away from home, or work in remote areas with little social contact and limited health care. There is additional occupational risk when there is contact with human blood or blood products where adequate precautions are not taken.

Discrimination based on HIV status in the workplace creates a climate of fear and hostility in the population and even contributes to the spread of the epidemic. However effective workplace policies as well as information and education programmes can help to combat the epidemic at the workplace and create greater tolerance for workers with HIV/AIDS.

2.12 Labour inspection

Most of the challenges mentioned above can be tackled by a properly functioning labour inspection system. 129 ILO Members States have ratified ILO No. 81, making it one of the most ratified instruments of the organization, and a “door-opener” for prevention policy, technical cooperation and promoting a health and safety culture.

As the saying goes, prevention is better than cure. Today, advice, information and publicity in most labour inspection systems go far beyond merely supplying technical counsel on safety and health matters. As well as providing technical expertise, by participating in standard setting or child labour monitoring labour inspectors can provide ideas for new legislation and regulations by notifying the competent authority of defects or abuses not specially covered by existing legal provisions.

People in favour of rapid industrialization were not always aware of the price to pay in terms of human suffering and environmental degradation. This resulted in a lack of financial resources, the major organizational weakness of most inspectorates, and consequently a lack of staff, premises, equipment and transport.

The fact that labour inspectors have an important future role to play in the analysis and prevention of potential major hazards has been largely recognized and in the ongoing process of improving efficiency and effectiveness of the labour inspectorates, an increasing number of national action programmes on prevention have been set up by the inspectorates all over the world to contribute to decent working conditions.

So, in today's global economy, does safety pay? We address that issue in our next chapter.

3. SAFETY PAYS

3.1 Does good occupational safety and health cost too much?

This question is heard in various forms and contexts. Can developing and newly industrializing countries "afford" the best health and safety at work, or will it hold back their development efforts? Given the rapid globalization of the economy, will the industrialized countries have to lower their own health and safety standards in order to compete? Similarly, will companies have to cut corners on health and safety if they are to defend and expand their market share?

Without going into the morality of such discussions, the evidence gathered by the ILO and others suggests that it would be more pertinent to ask if any country or any company can still afford to be *without* the highest standards of workplace health and safety.

3.2 Cost of work accidents and illness: over \$1,250,000 million a year

No universal and commonly agreed method exists for estimating the economic burden of work-related accidents and diseases. Any calculation of such costs to society – and to enterprises - depends on selected criteria.

Based on a selected compensation system, the ILO has estimated that 4 per cent of Gross Domestic Product (GDP – one of the most-used measurements of national wealth) is lost due to accidents and work-related diseases.

In 2001, 4 per cent of world GDP came to more than US\$ 1,251,353 million.²¹

The estimated percentage is a global average – a rough indicator of just how much the world as a whole pays for its work deaths, injuries and illnesses. A country or region with higher-than-average casualty rates will lose a greater part of its national wealth.

In Latin America, for example, a conference of experts brought together by the Inter-American Development Bank in the year 2000 noted that "Lack of conscience and poor enforcement of occupational safety legislation expose up to 80 per cent of Latin America's rapidly growing labour force of more than 200 million people to work-related accidents and health consequences with a yearly estimated cost of \$76 billion, according to calculations. Although information is scarce due to under-reporting and inconsistent registration of injuries and illnesses, data presented at the conference showed that developing countries suffer huge losses due to work-generated illnesses, accidents and deaths, amounting to up to 10 per cent of gross domestic product."²²

The losses will not be entirely proportionate to the casualties. The poorer a country or region is, the more sensitive will its economy be to the impact of any one cost, including work-related accidents and disease. On the other hand, richer countries are likely to register and compensate a higher proportion of casualties, and to pay more per compensated case.

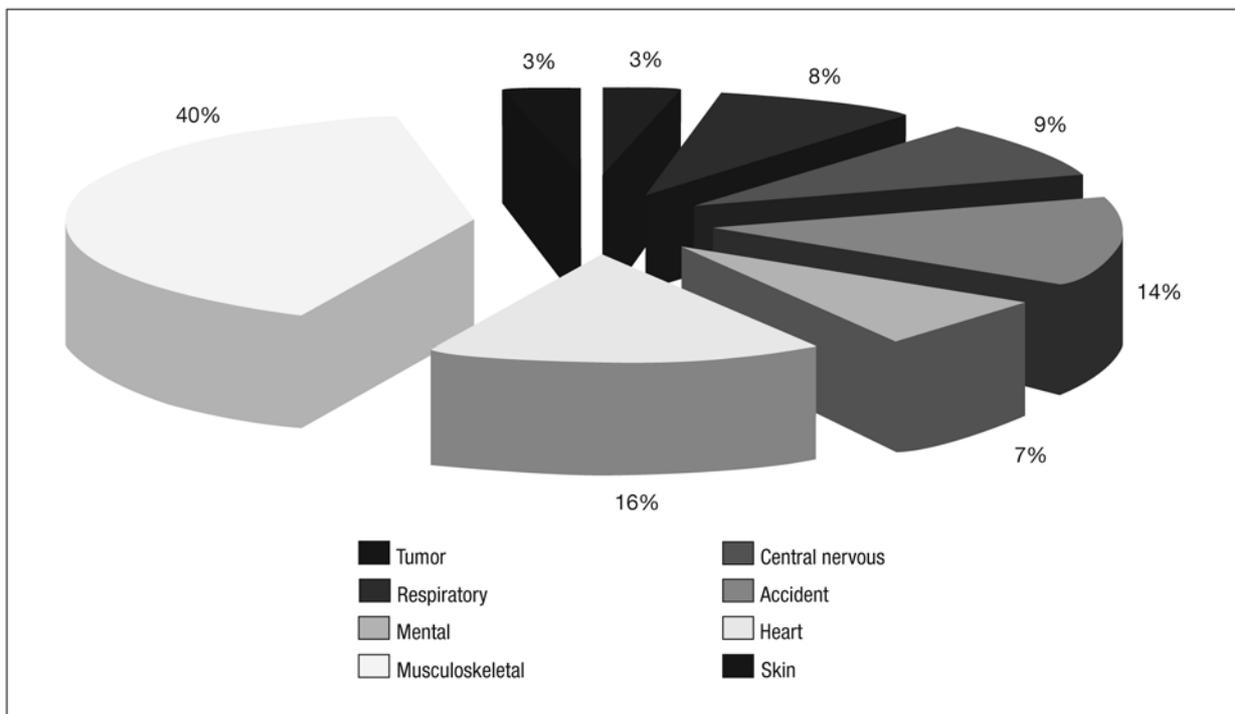
Ultimately, even though the majority of the working population is not covered by compensation schemes, the combined burden on society and the individual is the same.

It should be added that the ILO estimate takes only a fraction of work-related cancers into account, as these are usually neither properly recorded nor compensated. Furthermore, work-related communicable diseases have not been included at all.

This kind of compensation-based calculation also gives a distorted picture of fatalities. Usually, long-term disabilities become many times more expensive than fatalities, although the gravity of the consequences may be much smaller.

However, *Fig. 4* which is based on compensated diseases and related costs in Finland²³ is undoubtedly correct in identifying musculo-skeletal disorders as the biggest item in compensation costs. These diseases cause relatively long absences from work, for example in the case of lower back pain, and become a major financial burden on society. Although these are not often covered as compensated occupational diseases in the developing countries the economic burden remains the same: it will have to be only covered by the victims themselves and their relatives.

Figure 3. Compensated cost of injuries and diseases



Apart from compensation payments, costs borne by society due in part to work-related accidents and diseases include:

- **Early retirements:** In high-income countries, about 40 per cent of all retirements before the statutory age are caused by disability. On average, this shortens working life by about five years, and it is equivalent to 14 per cent of the lifetime working capacity of the employed labour force.

- **Absenteeism:** An average of 5 per cent (average 5.4 days absence from work during a period of 6 months, see ref. 4) of the work force is absent from work every day. This may vary from 2 per cent to 10 per cent depending on the sector, type of work and management culture.

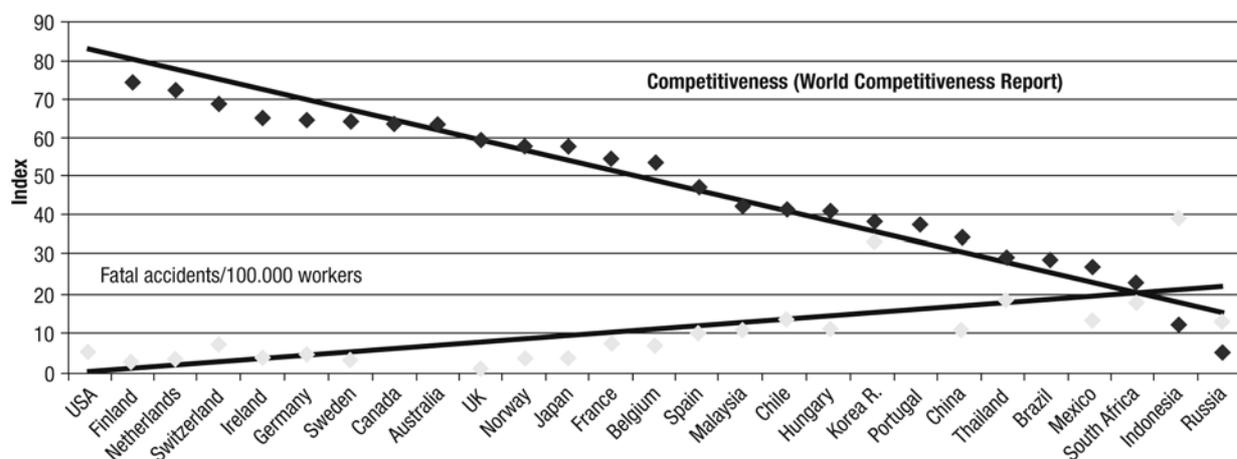
- **Unemployment:** A large number of unemployed workers have an impairment of working capacity that is not great enough for them to be entitled to a personal disability pension or compensation but which seriously reduces their re-employability. An average of one-third of unemployed people have such complications, see ref. 4.

- **Poorer households:** An occupational injury to one worker can seriously reduce the income of a household. In the USA, for example, workers who receive a partial disability due to a workplace injury lose about 40 percent of their income over five years. Lost earnings are put at US\$8,000 per injury over a 10-year period, with women losing a greater percentage of their earnings than men. Workplace injuries and illnesses typically reduce the overall earnings of households. In many cases, other family members may have to give up jobs in order to care for an injured worker. A Rand Institute study estimated the cost of home care of injured family members by other household members—6.2 million workdays a year in the US—at \$162 million.²⁴

3.3 Safety and competitiveness

There is no statistical evidence that economies with lower occupational health and safety standards are more competitive. On the contrary, ILO research suggests that, by and large, the safest-working countries also have the best competitiveness ratings.

Figure 4. Competitiveness and safety



Source: ILO, from data by IMD and ILO.

One of the most authoritative rankings of countries by competitiveness is published each year by the International Institute for Management Development IMD in Lausanne.²⁵ It currently analyses the competitiveness of 60 economies on the basis of 320 criteria. The ILO plotted selected IMD competitiveness rankings in 2002 against the ILO's own occupational health and safety rankings.

The results are set out in *Fig. 5*. They show a strong link between high safety and high competitiveness. The same exercise using the competitiveness rankings issued by the World Economic Forum yielded broadly similar results.²⁶

3.4 The business case: safety and the bottom line

Many of the world's foremost companies accept that, quite apart from a human concern for their employees' well-being, a "business case" can be made for achieving the highest occupational health and safety standards.

Impacts of poor health and safety on a company's bottom line may include:

- Higher absenteeism and more downtime, leading to loss of productivity, underutilization of expensive production plant and a possible decrease in economies of scale.
- Low morale, leading to loss of productivity.
- Loss of skilled, experienced employees, plus the loss of the company's investment in their training.
- Difficulty in recruiting high-quality employees.
- Payment of compensation and/or damages to injured or sick workers or to the dependents of workers killed. Associated legal costs.
- Payment of danger bonuses.
- Higher insurance premiums.
- Material damage to equipment and premises, due to incidents and accidents.
- Fines.
- Disputes with trade unions, public authorities and/or local residents.
- Loss of image.
- Loss of custom – particularly in the case of subcontractors to larger companies.
- In high-profile cases, complete or partial loss of the "licence to operate".

Certainly, the direct costs to business are very high.

In the European Union, every year nearly 5 million employees suffer work-related accidents involving more than three days' absence from work, and a further 5,500 are killed. According to the European Agency for Safety and Health At Work, "besides the human suffering, these accidents have a strong economic impact on business, as 150 million workdays are lost and the insurance costs to be borne by industry add up to €20 billion."²⁷

American businesses spend US\$170.9 billion a year on costs associated with occupational injuries and illnesses, according to estimates quoted by the US Occupational Safety and Health Administration (OSHA).²⁸ 864 American companies participate in the Voluntary Protection Programs—OSHA's recognition schemes for worksites with exemplary safety and health programmes. Together, these companies average 54 per cent fewer injuries and illnesses and 60 to 80 per cent lower lost-workday rates than other US companies in their industries. As a result, the Voluntary Protection Programs Participants' Association estimates that these sites have saved more than \$1 billion since 1982.

As EU and US occupational casualty rates are among the world's lowest, the costs incurred by companies in many other regions may be higher.

For businesses wishing to make a cost-benefit analysis of safety and health protection, a number of practical guides are available.²⁹

In future, business may in any case face political pressure to take over more of the costs currently incurred by society as a result of work-related casualties and disease. A World Health Organization report to a European ministerial conference in 1999 noted: "At a national level there is increasing concern over externalization by the enterprises of the costs incurred as a result of work-related injuries and ill health due to poor health, environment and safety management. Internalization of such costs can help to reduce this economic burden on society."³⁰

3.5 Reputation and responsibility

Many companies are now giving serious consideration to a triple bottom line which measures their economic but also their social and environmental performance - *Profits, People and Planet*.

The reasons for this trend towards "sustainability" or "corporate social responsibility" are complex, but one factor is certainly the growing acceptance that corporate image has a major impact on companies' economic performance. Financial markets have become increasingly interested in companies' social and ethical standards. Accountancy, too, is placing greater emphasis on the valuation of intangible assets, including "human capital".

If companies can credibly report that they have good working conditions, this is likely to benefit their financial results.

Occupational health and safety are undoubtedly important elements here. One of the most developed and widely recognized sets of guidelines for sustainability reporting by companies and others has been developed by the Global Reporting Initiative (GRI).³¹ For a company's report to be "in accordance" with these guidelines, it must include a series of "core indicators". Among these are:

- "Practices on recording and notification of occupational accidents and diseases, and how they relate to the ILO Code of Practice on Recording and Notification of Occupational Accidents and Diseases."
- "Description of formal joint health and safety committees comprising management and worker representatives and proportion of workforce covered by any such committees."
- "Standard injury, lost day, and absentee rates and number of work-related fatalities (including subcontracted workers)."
- "Description of policies or programmes (for the workplace and beyond) on HIV/AIDS."

Non-core "additional indicators" recommended in the GRI guidelines include:

- "Evidence of substantial compliance with the ILO Guidelines for Occupational Health Management Systems."³²

- "Description of formal agreements with trade unions or other bona fide employee representatives covering health and safety at work and proportion of the workforce covered by any such agreements."

Use of reporting formats such as the GRI guidelines is voluntary. Their future credibility will certainly depend in part on arrangements for verification of companies' reports. The GRI, for example, has not so far involved itself in checking the accuracy of reports made under its guidelines. However, standards for such verification or "assurance" are emerging in various quarters.³³

The financial impact of companies' labour practices, including their health and safety performance, is therefore likely to grow.

Chief executives of major companies are well aware of this. The World Economic Forum (WEF) recently conducted a survey among the CEOs of the 40 corporations signed up to its joint statement on global corporate citizenship.³⁴ It found worker health and safety to be one of the key corporate citizenship issues identified by the CEOs.

The survey also noted that some companies are beginning to build corporate citizenship elements into the structures for appraising and rewarding their managers' performance. "The two issues most commonly integrated into performance systems are employee safety and employee diversity, followed by ethical and environmental performance. Not surprisingly, safety is a key element in the performance and incentive systems of most of the 'heavy industry' or 'extractive industry' companies surveyed."

Naturally, companies that care about their reputation also tend to look to their supply chains. The WEF study cites findings drawn from the 2002 yearly corporate sustainability assessment for the Dow Jones Sustainability Indexes (DJSI). This evaluation of 1,336 companies is conducted by Sustainable Asset Management. Asked about their criteria for the "selection and ongoing evaluation of key suppliers and service providers worldwide", more than 20 per cent of these companies named occupational health and safety – the second most-used criterion after environmental protection.

Clearly, for companies and countries, safety pays.

4. A global safety culture

4.1 Safety culture - how?

Having established that safety pays, how do we go about achieving it worldwide?

The ILO believes that a strong "safety culture" is crucial – for workers, employers and governments alike. Three points should be emphasized here:

- Enterprise management and commitment have a key role. Companies that have an occupational safety and health management system (OSH-MS) set up according to the ILO Guidelines, *ILO-OSH 2001*³⁵, have better records both on safety and on productivity.

- The stronger the union, the safer the workplace. Even the best-framed occupational health and safety regulations will have little impact unless the people most directly concerned, the workers, are able to collectively defend their interests. Workers' involvement in planning and running the company's occupational health and safety management system is of vital importance here – as, of course, is the freedom to form and join trade unions. For example, the high safety standards in Sweden are a direct result of long-term policies on workers' involvement and a well-functioning tripartite mechanism.

- Much of the action on safety and health must be local, but much of the framework must be global. This is both a moral and a practical necessity. Moral, because we cannot place a lower value on workers' lives in some parts of the world than in others. Practical, because in a global economy, we cannot allow safety and health to be undermined by false concerns about competitiveness.

The ILO's SafeWork programme is well-placed to influence the global agenda. The ILO is the place where the world's worker, employer and government representatives meet on equal terms. And it is currently campaigning for the provision of decent work worldwide. As ILO Director General Juan Somavia has stated, "*Decent Work must be Safe Work, and we are a long way from achieving that goal.*"³⁶

4.2 ILO Standards

On safety and health as in other fields, the ILO adopts two main types of standard: Conventions (which are ratifiable and binding) and Recommendations (more detailed, often supplementing a Convention).

Currently, there are more than seventy ILO Conventions mainly or partly related to questions of safety and health. Many others deal with matters that are also clearly relevant to the safety and health agenda – for example, freedom of association, collective bargaining, labour inspection, gender equality and child labour.³⁷

ILO health and safety standards cover four main categories:

- *Guiding policies for action:* These include the Occupational Safety and Health Convention (No. 155) and its accompanying Recommendation (No. 164), which prescribe the progressive application of comprehensive preventive measures and the adoption of a coherent national policy on occupational safety and health. They also establish the

responsibility of employers for making work and equipment safe and without risk to health, as well as the duties and rights of workers. Further prominent examples are the Occupational Health Services Convention (No. 161) and its accompanying Recommendation (No. 171), and the List of Occupational Diseases Recommendation (No. 194).

- *Sectors:* some of the most hazardous sectors are covered by specific Conventions - for example, mining, construction and dock work. An important recent addition is Convention No. 184 on Safety and Health in Agriculture, adopted in 2001 together with the accompanying Recommendation No. 192.

- *Specific risks affecting more than one sector:* for example, chemicals, ionizing radiation, benzene, asbestos, occupational cancer, air pollution, noise and vibration.

- *Protection measures:* for example, the guarding of machinery, medical examination of young workers or the maximum weight of loads to be transported by one worker.

In addition, the ILO has issued more than thirty Codes of Practice on occupational health and safety.³⁸ These are intended as practical guides for public authorities and services, employers and workers concerned, specialized protection and prevention bodies, enterprises and safety and health committees. Codes of Practice are not legally binding instruments and do not aim to replace the provisions of national laws or regulations, or accepted standards.

Other practical ILO contributions include a number of health and safety programmes conducted in cooperation with other international and national organizations. An example is the International Programme on Chemical Safety.³⁹

4.3 The way ahead

The ILO's standard-setting on safety and health has evolved considerably over the years. Recently, there has been a trend towards adopting policy-oriented instruments, rather than laying down precise legal standards. One reason for this is the realization that substances and processes, as well as techniques for dealing with them, are constantly changing. International standards must therefore be sufficiently flexible to adapt. They also need to provide for the periodic review of national policy, as well as measures adopted at the national level, in the light of current technical progress and advances in scientific knowledge.

The focus of occupational safety and health provisions has been shifting from industrial safety to workplace safety and health (in other words, the adaptation of the working environment to the worker). Modern safety and health standards clearly reflect not only collective responsibilities towards workplace safety but also the respective roles and responsibilities of, and co-operation between, employers, workers and their representatives.

Another important shift in standard-setting has been towards the *prevention* of occupational accidents and diseases, as opposed to the sole prescription of *protective* measures.

Standard-setting will no doubt continue to evolve within the new context of a fully globalized economy. The ILO's safety and health work will also have to keep pace with new, cross-cutting concepts in this field, such as "working or safety cultures", the renewal of "work ethics" and, more recently, the development of "quality management systems"

and the move from technical rules to systems-based approaches, which require fully functional management frameworks.

So what should be the ILO's safety and health priorities in future? In 2002, a detailed survey of its constituents – the world's governments, workers and employers – provided some answers.

The survey brought responses from 102 member States. Replies from 47 representative employers' and workers' organizations were also received, either transmitted by the governments or sent in separately. All regions of the world were well represented among the respondents. Their answers provide a wealth of valuable new information both on national law and practice and on the impact of ILO standards.

The results of the survey will be included in a new in-depth report on the ILO's safety and health standard-setting.⁴⁰ This will be tabled for discussion at the June 2003 session of the ILO's plenary, the International Labour Conference.

The strongest theme to emerge from the report and the survey is the crucial importance of promoting ILO standards and other instruments, such as Codes of Practice and Guidelines.

Promotional tools at the ILO's disposal include technical cooperation and dissemination of information. The ILO Constitution also provides for the collection of information on the state of national law and practice in member States with respect to non-ratified Conventions and Recommendations. More regular use of this provision could contribute to an improved identification of the obstacles to the implementation of Conventions and Recommendations and, when required, the needs for technical assistance in order to overcome these obstacles. At present, the ratification rates for the main ILO health and safety Conventions are relatively low. However, the survey identified a number of States that are likely to ratify. Survey responses also showed very clearly that ILO standard-setting has influenced national legislation and practice in many countries that have not formally ratified the standards.

4.4 Strategies

The ILO is pursuing two major strategies to improve the implementation of its safety and health standards:

- An **integrated approach** that will streamline all its means of action, including standard-setting, codes and guidelines, technical cooperation, international cooperation, statistical analysis and information dissemination, so as to achieve more effective occupational safety and health implementation by member States.

- **Use of voluntary measures and, in particular, wide use of the ILO's new *Guidelines on Occupational Safety and Health Management Systems, ILO-OSH 2001*.** The aim is to establish a proper *safety culture* at the enterprise level. Governments can be involved in supporting such management systems and establishing a national framework for their promotion. Equally, governments are asked to fulfil their role in setting their own national safety and health targets that are measurable.

4.5 Aims

The aims of the ILO's safety and health drive are:

- SafeWork programmes at the company, national and international levels. A National SafeWork Programme consists of:

- *National policy* established and published on highest possible level. Leaders must repeatedly and visibly subscribe to it.

- *National strategy* that includes vision, targets, time-limits, nomination of responsible and accountable units and persons, defined and adequate resources, continuous improvement and feedback.

- *National work plan or action programme.*

All of these should be discussed and agreed within a tripartite (worker/employer/government) set-up. A national programme may be divided into sectoral and regional programmes.

The ILO's International Programme supports the establishment and implementation of national programmes and facilitates exchanges of experience between all 175 member States of the ILO.

A company programme is an Occupational Health and Safety Management System well-implemented according to ILO's principles and guidelines.

- A functioning recording, notification and indicator system in order to gain a better picture of the problems and allow follow-up.

- Development of a modern labour inspection system – strengthening it qualitatively and quantitatively.

- Measurable targets for reducing occupational accidents and work-related diseases by targeting their causal factors (say, a 20 per cent reduction in the fatal accident rate within the next five years as measured by reliable records). A *national profile* or an inventory of the present safety and health state is a starting point.

- Gradual extension of the coverage of protective measures, compensation in case of injuries and occupational health services to workers not yet covered, such as those in agriculture and in the informal sector and the self-employed.

Ultimately, though, there is just one aim – to make the world of work a much healthier, safer place.

UN Secretary-General Kofi Annan⁴¹ put this very clearly: "*Safety and health of workers is a part and parcel of human security. As the lead United Nations agency for the protection of workers' rights, the ILO has been at the forefront of advocacy and activism in promoting safety and health at work. Safe Work is not only sound economic policy, it is a basic human right...*"

SOURCES AND RESOURCES

¹ For full information on the ILO's Global Estimates of Fatalities and Accidents, see

www.ilo.org/public/english/protection/safework/accidis/index.htm

A policy statement by ILO Director-General Juan Somavia, entitled *Decent Work- Safe Work*, is online at www.ilo.org/public/english/protection/safework/decent.htm

A comprehensive report, also named Decent Work - Safe Work, will be found at www.ilo.org/public/english/protection/safework/wdcongrs/ilo_rep.pdf

For more about ILO SafeWork, visit www.ilo.org/safework

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¹² F. Murie: *Preventing injuries and ill-health in the construction industry*, in ILO: [Labour Education 2002/1, Number 126 \(Geneva, 2002\)](http://www.ilo.org/public/english/dialogue/actrav/publ/126/index.htm). Online at www.ilo.org/public/english/dialogue/actrav/publ/126/index.htm

¹³ ILO: *Safety and health in the fishing industry*, report for discussion at the Tripartite Meeting on Safety and Health in the Fishing Industry, Geneva, 1999. Online at www.ilo.org/public/english/dialogue/sector/techmeet/tmfi99/tmfir.htm

¹⁴ ILO: *Draft guidelines on safety and health in shipbreaking*, report for the

Interregional Tripartite Meeting of Experts on Safety and Health in Shipbreaking for Selected Asian Countries and Turkey, Bangkok, 20-27 May 2003 (Geneva, 2003). Online at www.ilo.org/public/english/protection/safework/sectors/shipbrk/draft_guide.pdf

¹⁵ Loewenson R. Health impact of Occupational Risks in the Informal Sector in Zimbabwe, ILO Geneva, available at: <http://www.ilo.org/public/english/protection/safework/papers/infzimb/index.htm>

¹⁶ ILO: *Decent work and the informal economy*, Report VI, International Labour Conference, 90th Session, June 2002, Geneva. ISBN 92-2-112429-0. Online at <http://www.ilo.org/public/english/standards/relm/ilc/ilc90/pdf/rep-vi.pdf>

¹⁷ *Analysis of manual lifting tasks: a qualitative alternative to the NIOSH Work Practice Guide*, in American Industrial Hygiene Association Journal 50 (3) (1989). (ref: CIS-90-680).

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¹⁹ For more information on the gender aspects of occupational safety and health, see the ILO's special web pages at www.ilo.org/public/english/protection/safework/gender/womenwk.htm

²⁰ See the web pages of the ILO's International Programme on the Elimination of Child Labour (IPEC) at www.ilo.org/public/english/standards/ipec - in particular, *Eliminating Hazardous Child Labour Step By Step*.

²¹ Based on the World Bank's calculation that total world GDP in 2001 was US\$31,283,839 million – see www.worldbank.org/data/datatopic/GDP.pdf

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²⁵ IMD: *World Competitiveness Yearbook* (Lausanne). For online information, see www02.imd.ch/wcy/

²⁶ The corresponding graphic using the World Economic Forum data is included in the ILO report *Decent Work – Safe Work*. See publication details above, in note 1.

²⁷ European Agency for Safety and Health at Work: *New tools to improve occupational safety and health and to increase the competitiveness of your business*, press release of 10 Sept. 2002 (Bilbao). Online in 11 EU languages at agency.osha.eu.int/news/press_releases/index_en.htm

²⁸ From the OSHA publication cited in note 10 above.

²⁹ Finnish Ministry of Social Affairs and Health: *The TYTA MODEL -Implement for Evaluating the Company's Working Environment Costs* (Tampere, 1999). Online at <http://www.ilo.org/public/english/protection/safework/whpwb/econo/tyta.pdf>

European Agency for Safety and Health at Work: *Inventory of socio-economic costs of work accidents* (Luxembourg: Office for Official Publications of the European Communities, 2002). ISBN 92-95007-67-0. Full English version online at agency.osha.eu.int/publications/reports/207/en/index.htm The main points (including downloadable spreadsheets) are online in 11 European languages as Factsheets 27 and 28 at agency.osha.eu.int/publications/factsheets/

The UK Health and Safety Executive has an online "ready reckoner" at www.hse.gov.uk/costs/index.asp

³⁰ World Health Organization Regional Office for Europe: *Towards good practice in health, environment and safety management in industrial and other enterprises*, report to the Third Ministerial Conference on Environment & Health, London 1999 (Copenhagen, 1999). Online at www.who.int/oeht/OCHweb/OCHweb/OSHpages/OSHDdocuments/ROs/EURO/Good%20Practice.pdf

³¹ Global Reporting Initiative: *Sustainability Reporting Guidelines 2002* (Amsterdam, 2002). Online at www.globalreporting.org/guidelines/2002.asp

³² ILO Guidelines on Occupational Safety and Health Management Systems (ILO/OSH 2001). Online at www.ilo.org/public/english/protection/safework/managmnt/guide.htm

³³ Notably the AA1000 Assurance Standard, which was launched on 25 March 2003. See www.accountability.org.uk/news/default.asp?id=37

³⁴ World Economic Forum and Prince of Wales International Business Leaders Forum: *Responding to the Leadership Challenge: findings of a CEO survey on global corporate citizenship*. Online at www.weforum.org/pdf/GCCI/Findings_of_CEO_survey_on_GCCI.pdf

³⁵ See note 32 above.

³⁶ In a speech in Geneva on 28 April 2002, Workers' Memorial Day.

³⁷ ILO standards can be consulted online via www.ilo.org/ilolex
For the main ILO standards on safety and health, see www.ilo.org/public/english/protection/safework/standard.htm#cr

³⁸ ILO Codes of Practice on occupational safety and health are online at www.ilo.org/public/english/protection/safework/cops/english/index.htm

³⁹ See www.who.int/pcs/index.htm

⁴⁰ ILO: *ILO standards related activities in the area of occupational safety and health – report for a general discussion based on an integrated approach at the 91st session (2003) of the ILC*. Scheduled for publication in April 2003 (Geneva). It will be available online via the ILO site at www.ilo.org A database drawn from the survey results will also be available on the ILO site and on CD-ROM.

⁴¹ In a speech delivered in New York on 28 April 2002, Workers' Memorial Day.
www.ilo.org/safework.