

Good Practices and Challenges in Promoting Decent Work in Construction and Infrastructure Projects



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Good practices and challenges in promoting decent work in construction and infrastructure projects

Issues paper for discussion at the Global Dialogue Forum on Good Practices and Challenges in Promoting Decent Work in Construction and Infrastructure Projects
(Geneva, 19–20 November 2015)

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Preface

This paper is intended to serve as a basis for discussion at the Global Dialogue Forum on Good Practices and Challenges in Promoting Decent Work in Construction and Infrastructure Projects. At its 322nd Session (November 2014), the ILO's Governing Body decided that the Forum would: be held on 19 and 20 November 2015; be composed of six Worker and six Employer participants, selected after consultations with the respective groups of the Governing Body; and be open to all interested governments, while representatives of certain intergovernmental and international non-governmental organizations would be invited to attend.¹ The Forum's purpose is for tripartite constituents to discuss good practices in promoting decent work in the construction sector, including in large-scale infrastructure projects such as mega sporting events, with a view to adopting points of consensus that would encourage future programme development and inform policy-making on this topic at the international, regional and national levels. The structure of the paper has been decided on the basis of consultations with representatives of the constituents for the sectoral advisory bodies. The paper includes separate chapters on different issues that will be discussed during the Forum: employment trends, skills, occupational health and safety, and corporate social responsibility.

¹ ILO: *Sectoral and technical meetings 2013–14 and Sectoral Activities Programme for 2014–15*, Governing Body, 322nd Session, Geneva, Oct.–Nov. 2014, GB.322/POL/4.

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1. Overview of employment in the construction industry

The construction sector plays an important role in the economy. It comprises enterprises primarily engaged in the construction, renovation, maintenance and demolition of buildings and in civil engineering projects (for example roads and utility systems). It creates value by transforming source materials into capital assets that are essential for economic activity and the delivery of infrastructure services, and consequently has a high impact on poverty reduction and income generation.

This chapter presents an overview of employment in construction, with general trends and disaggregation by region. It presents specific data on women, and its final section focuses on technological trends in the industry with implications for employment.

The construction industry has great employment creation potential, not only in on-site construction but also in construction-related professional services and the supply of materials and components. Construction workers represent between 5 and 10 per cent of the workforce in industrialized countries and an increasing proportion in many developing countries. Around 90 per cent are male, with the highest female participation rates occurring in Asia. A large proportion of construction workers are unskilled and, for many, construction is the entry point to paid labour. In many countries construction work is mainly carried out by local workers; in others by a mix of local and migrant workers; and in a few essentially by migrant workers.¹

The industry faces a number of challenges, including a high level of health problems and accidents, construction being one of the most hazardous sectors.² Collective bargaining has declined.³ In many countries, especially in the developing world, collective agreements only apply to core workers, who are a small proportion of the workforce. Further challenges include a high level of informalization of employment, enterprises and the organization of the construction process, with negative implications for social protection and training.⁴

There is evidence from many countries that a large number of workers, particularly those on temporary contracts, do not have access to social security. Often, the workers who are most in need receive no health care, no holiday pay and no protection against loss of pay when they are unable to work due to unemployment, ill health, accidents or old age.

¹ J. Wells: "Labour migration and international construction", in *Habitat International*, Vol. 20, No. 2, pp. 295–306. 1996, available at: <http://www.sciencedirect.com/science/article/pii/019739759500064X>.

² J. Weeks: "Health and safety hazards in the construction industry", 2011, in *Encyclopaedia of Occupational Health and Safety*, Part XVI–Construction, Geneva, ILO.

³ ILO: *The construction industry in the twenty-first century: Its image, employment prospects and skill requirements*, Geneva, 2001.

⁴ Illustrations of the extent of informal work throughout the world include, for instance, the Plurinational State of Bolivia (92.3 per cent), China (35.2 per cent), India (97.6 per cent), Indonesia (91.9 per cent), Mauritius (20.9 per cent), Pakistan (96.7 per cent) and Serbia (26.1 per cent). Source: ILO: *Women and Men in the Informal Economy: A Statistical Picture*, Geneva, 2013.

This also includes self-employed workers.⁵ Social dialogue with employers – and also with governments – has traditionally been a powerful means for workers to collectively bargain for better wages and better conditions of work. However, the current high proportion of temporary, casual, informal and unemployed workers makes it very difficult to organize in order to engage in social dialogue.

This chapter presents employment trends, disaggregated by region. It also provides information on technological innovations, as they have an impact on the structure of the industry and on employment.

Employment trends

While the 2008 economic crisis was triggered by the subprime mortgage markets in the United States, the problem quickly spread, affecting nearly all industries. The construction sector suffered an unprecedented decline in many countries, which affected both enterprises and workers in terms of contracts for projects and levels of employment.

Employment levels have since recovered and have even improved on pre-crisis levels in north-western Europe and some countries in the Americas, Asia and Africa. However, employment levels in southern Europe are only slowly recovering.⁶ Employment losses have affected all types of workers, including masons, electricians, engineers, architects and construction operators.

Global construction output has recovered from the global economic crisis and is expected to increase in the coming years due to increased urbanization, infrastructure renewal and the rising demand for water and energy, leading to demand for the construction of facilities. However, a continued decline in oil prices may affect future infrastructure projects, particularly in oil-exporting countries.

Global Construction 2025 forecasts that global construction demand will increase until 2025.⁷ China, India and the United States are expected to account for up to 60 per cent of all global growth, while the construction market in Western Europe will decline by 0.28 per cent per year over this period. Construction activity in emerging markets will represent 63 per cent of total construction profits by 2025. Demand for construction equipment, chemicals and other inputs is expected to grow in line with industry output.

Increasing attention has recently been paid to large-scale investment projects, often known as megaprojects. In the last few years, megaprojects have preceded global sporting events. Alongside the improvement of infrastructure (including stadiums, hotels and transport infrastructure) these mega-events create employment opportunities and opportunities to improve health and safety conditions and workers' rights in the industry. One initiative that promoted employability was entitled "Professional capacity

⁵ ILO: *The construction industry in the twenty-first century*, op. cit.

⁶ For instance, there are respectively, 59.24 per cent, 46.88 per cent and 63.37 per cent fewer jobs available in the construction industry in Greece, Portugal and Spain than at the beginning of the crisis.

⁷ Global Construction Perspectives and Oxford Economics: *Global Construction 2025: A global forecast for the construction industry to 2025*, 2013. Unless otherwise specified, growth is expressed in terms of compound annual growth rate.

development for the 2014 World Cup construction works”. Developed by the Union of Heavy Construction Workers of Rio de Janeiro, this initiative trained skilled labour in the heavy construction sector to meet demands arising from the preparatory activities for the World Cup. According to data collected by the ILO, 250 heavy construction workers received training from 2010 to 2013. All of them were employed in construction works related to the 2014 World Cup. Data about multiplier effects after the World Cup is still being collated by the ILO.

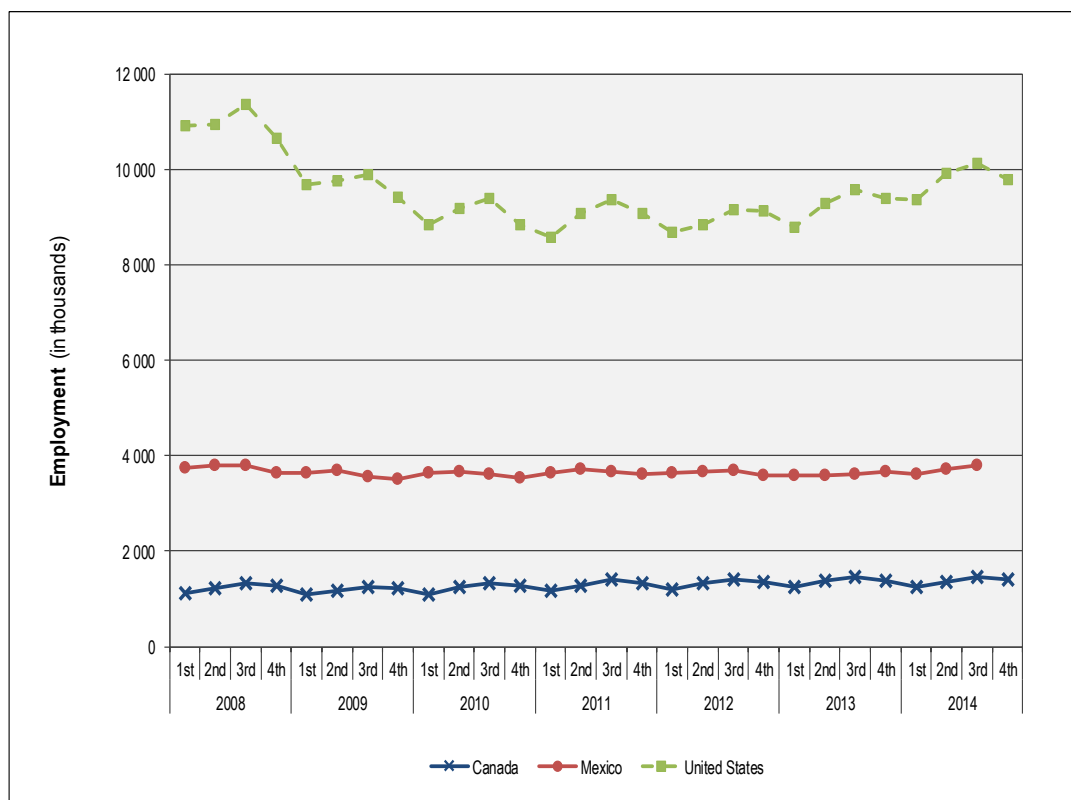
Americas

Construction employment decreased in the United States shortly after the financial crisis of 2008. The housing market was at the centre of the subprime mortgage crisis, which quickly affected new housing projects and housing finance. In only one year, 11 per cent of jobs were lost (figure 1.1(a)). Between the first quarter of 2009 and the worst point in the crisis (first quarter of 2011), a total of 2.3 million jobs were lost (21 per cent of total construction employment). Employment in construction has since picked up. But in December 2014 it was still about 1.5 million lower than before the financial crisis.⁸

⁸ Data from the US Bureau of Labor Statistics.

Figure 1.1. Employment in construction in the Americas (first quarter 2008–fourth quarter 2014, by thousands/quarters)

1.1(a). North America



Source: ILO: *Short-term indicators of the labour market*, ISIC-4.

According to *Global Construction 2025*, the number of construction workers in the United States is expected to rise from 6,389,000 in 2015⁹ to 7,365,000 by 2020¹⁰ due to an increasing population, the pressing need for new homes and in order to close the accumulated “infrastructure deficit” identified by experts, such as the American Society of Civil Engineers. Employment opportunities may also be created in the infrastructure sector in Canada owing to the exploitation of oil and shale gas reserves.

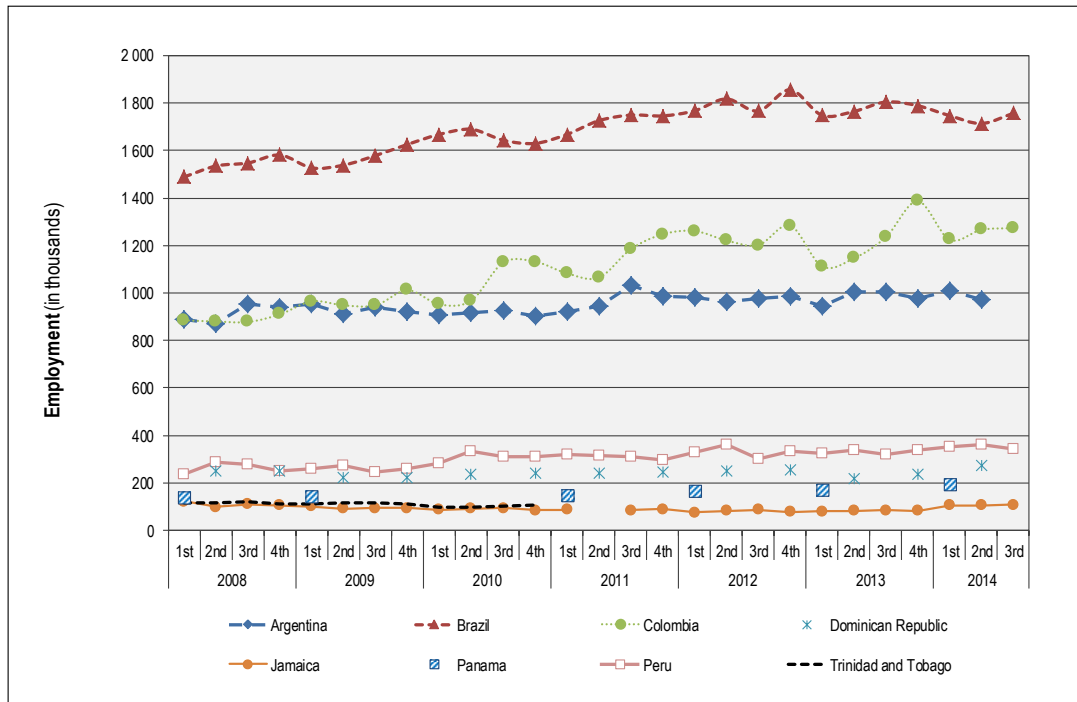
In Latin America and the Caribbean, employment in construction remained stable or even increased, for example in Argentina, Colombia, Peru and Brazil (figure 1.1(b)). In Brazil, employment increased by 259,000 workers between the first quarters of 2008 and 2013. There is also potential in Latin America and the Caribbean for employment creation in the housing sector because of the housing backlog.¹¹

⁹ <http://www.bls.gov/iag/tgs/iag23.htm#iag23emp1.f.P>. The projection is for construction workers, while figure 1.1 relates to construction employment.

¹⁰ <http://www.bls.gov/opub/mlr/2012/01/art4full.pdf>.

¹¹ *Global Construction 2025* estimates that almost 60 million people in Latin America and the Caribbean live in homes classified as unfit for habitation. The same report predicts that 27.5 million new homes will be needed in Brazil and Mexico by 2025.

1.1(b). Latin America and the Caribbean



Source: ILO: *Short-term indicators of the labour market*, ISIC-4.

Europe

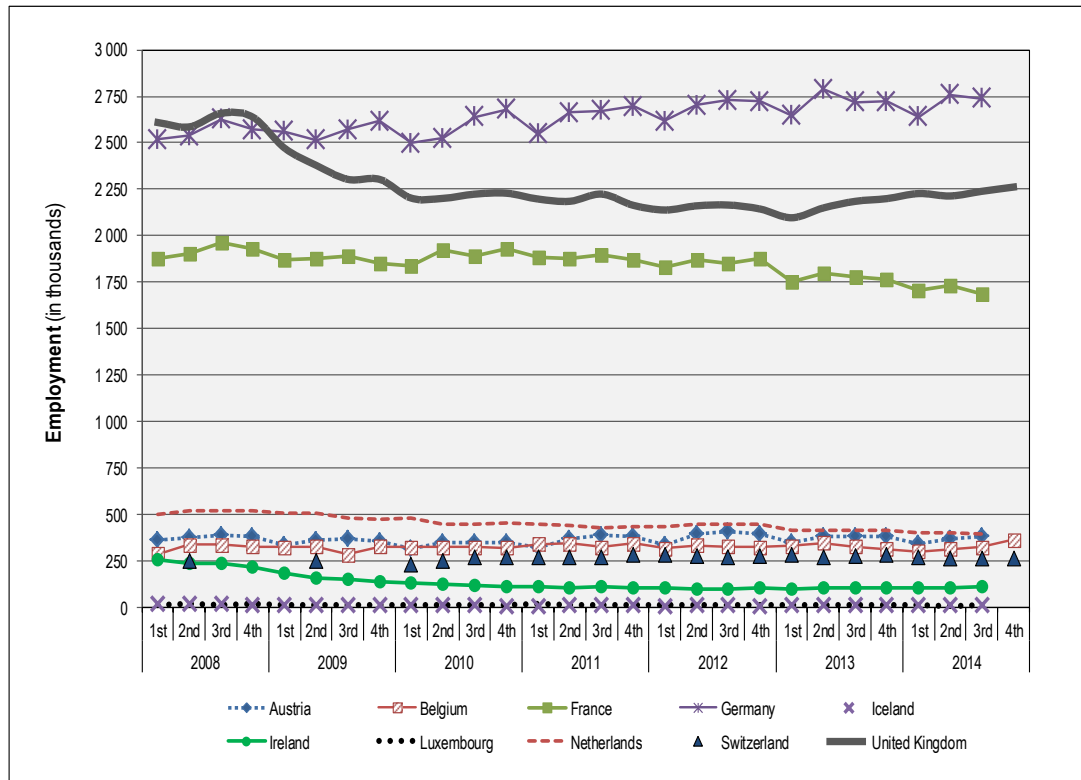
Employment trends differ across Europe. In recent years construction employment has decreased mainly in southern and Eastern Europe (figures 1.2(a), (b), (c), (d), (e)), with remarkable losses seen in some countries. For example, between the end of 2008 and 2013, construction employment decreased 58.5 per cent in Greece, 55 per cent in Spain and 44 per cent in Portugal. It also fell by 51 per cent in Ireland. On the other hand, construction employment experienced moderate growth in some countries of northern Europe (Norway, Sweden) and western Europe (Germany) and quite dramatic growth in Turkey (84.6 per cent). The Russian Federation saw wide fluctuations on a slightly upward trend, with 5.95 per cent growth between 2008 and 2013.

According to *Global Construction 2025*, employment creation across subsectors will vary in the medium-term. Business opportunities in the British private housing sector will improve due to an increasing population and the consequent pressing need for new homes, creating opportunities for job creation. The increasing willingness of Chinese and Middle Eastern sovereign wealth funds to invest in the infrastructure sector may also provide employment opportunities in the United Kingdom. In the Russian Federation and Turkey, rapid urbanization and the need to replace the existing housing stock may generate jobs in the private housing sector.¹²

¹² Global Construction Perspectives and Oxford Economics: *Global Construction 2025*, op. cit.

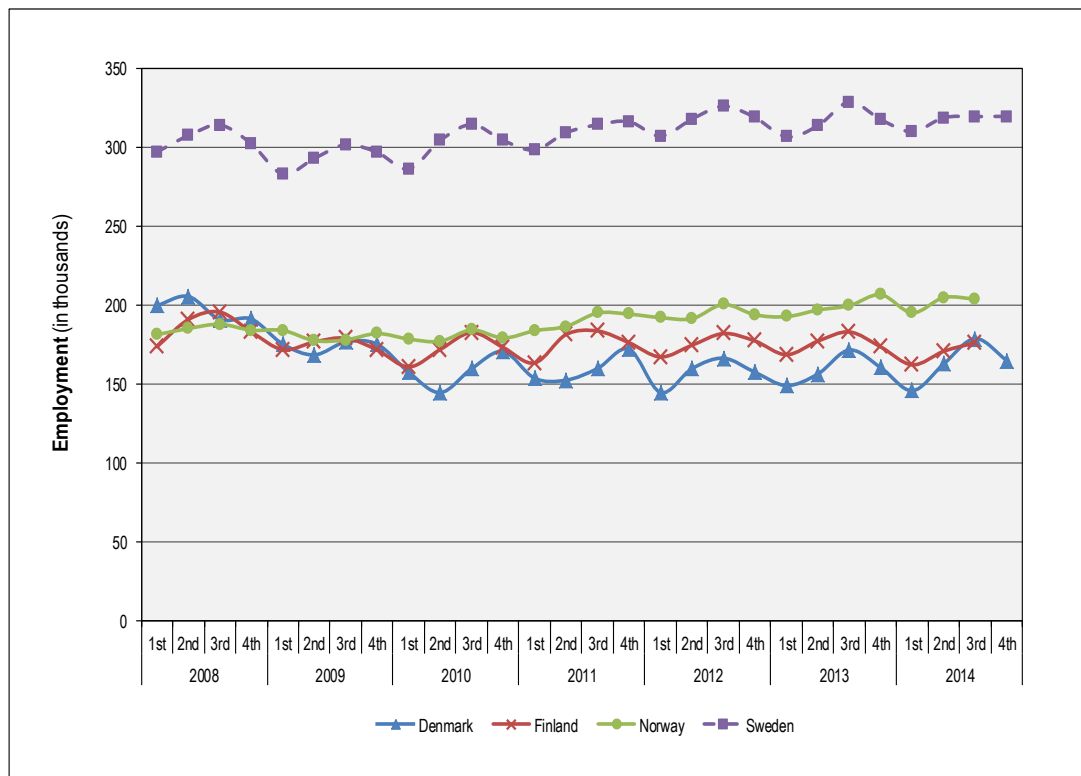
Figure 1.2. Employment in construction in Europe (first quarter 2008–fourth quarter 2014
by thousands/quarters)

1.2(a). Western Europe



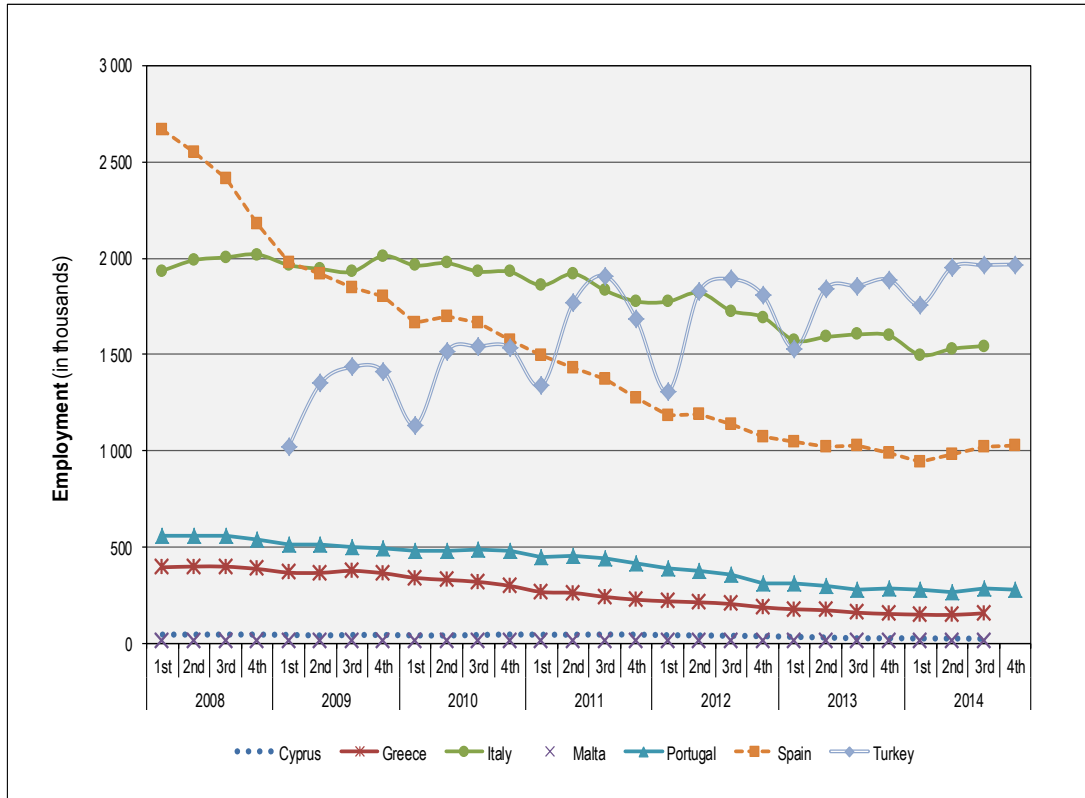
Source: ILO: *Short-term indicators of the labour market, ISIC-4.*

1.2(b). Northern Europe



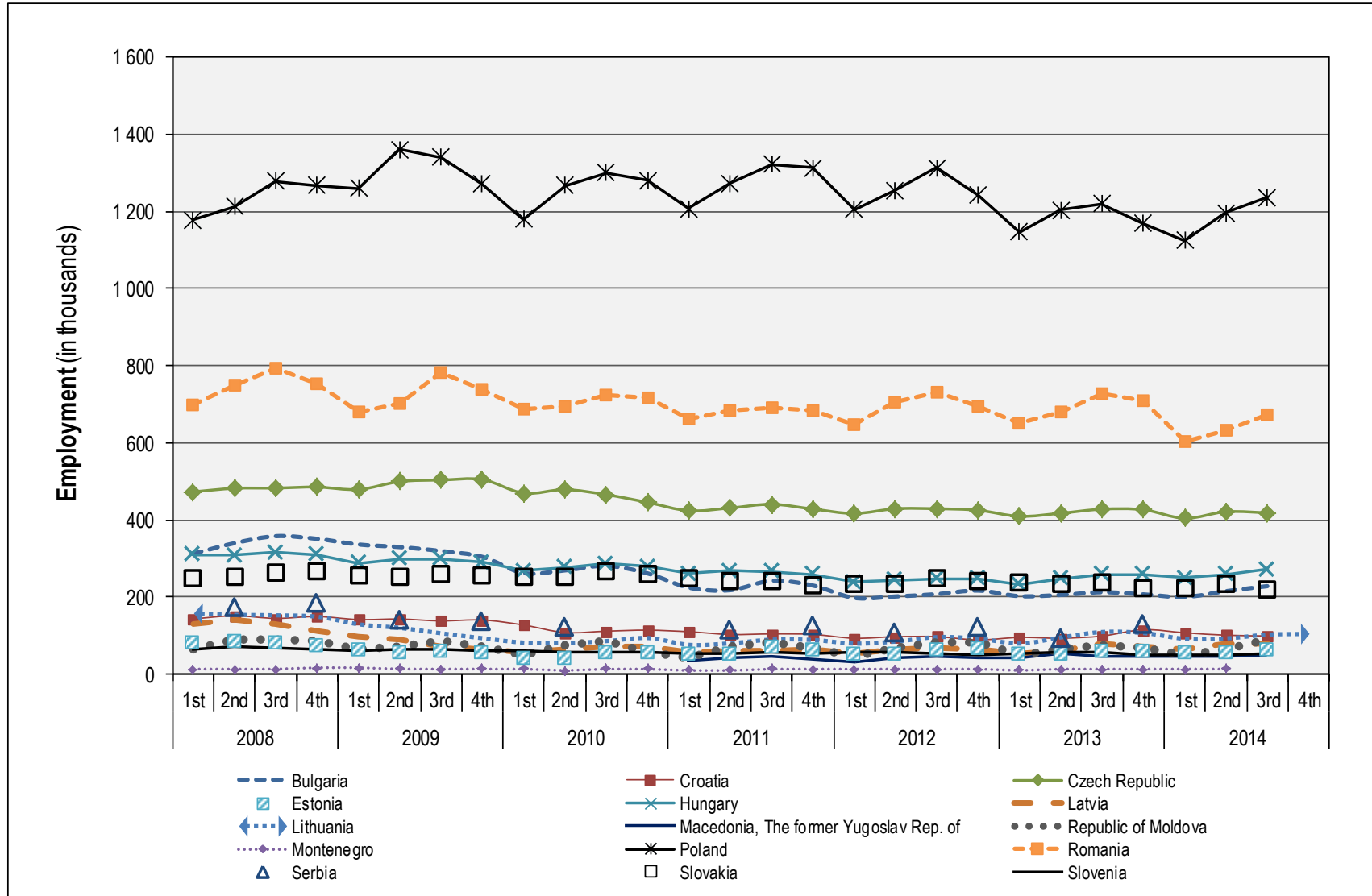
Source: ILO: *Short-term indicators of the labour market, ISIC-4.*

1.2(c). Southern Europe



Source: ILO: Short-term indicators of the labour market, ISIC-4.

1.2(d). Eastern Europe



Source: ILO: Short-term indicators of the labour market, ISIC-4.

Asia and Africa

Employment trends in the construction industry in Asia are highly variable across countries (figure 1.3(a)). Between the first quarters of 2008 and 2013, employment increased in Indonesia (2,152,000 workers), Saudi Arabia (986,000), Thailand (386,000) and Malaysia (250,000), while decreasing in the Philippines (1,740,000), Japan (400,000) and the Republic of Korea (92,000).

In the coming years, the housing sector may provide employment opportunities in India, due to an increasing population and the number of people moving out of poverty. Increasing demand may generate employment opportunities across all sectors in China, Indonesia, Viet Nam and the Philippines. According to *Global Construction 2025*, repair and maintenance works following the March 2011 earthquake and tsunami and preparations for the Tokyo 2020 Olympics will sustain activities in the sector. In Qatar, employment opportunities created in recent years will grow exponentially, as preparations for the 2022 World Cup bring a 10 per cent year on year growth until 2025, the highest in the world.

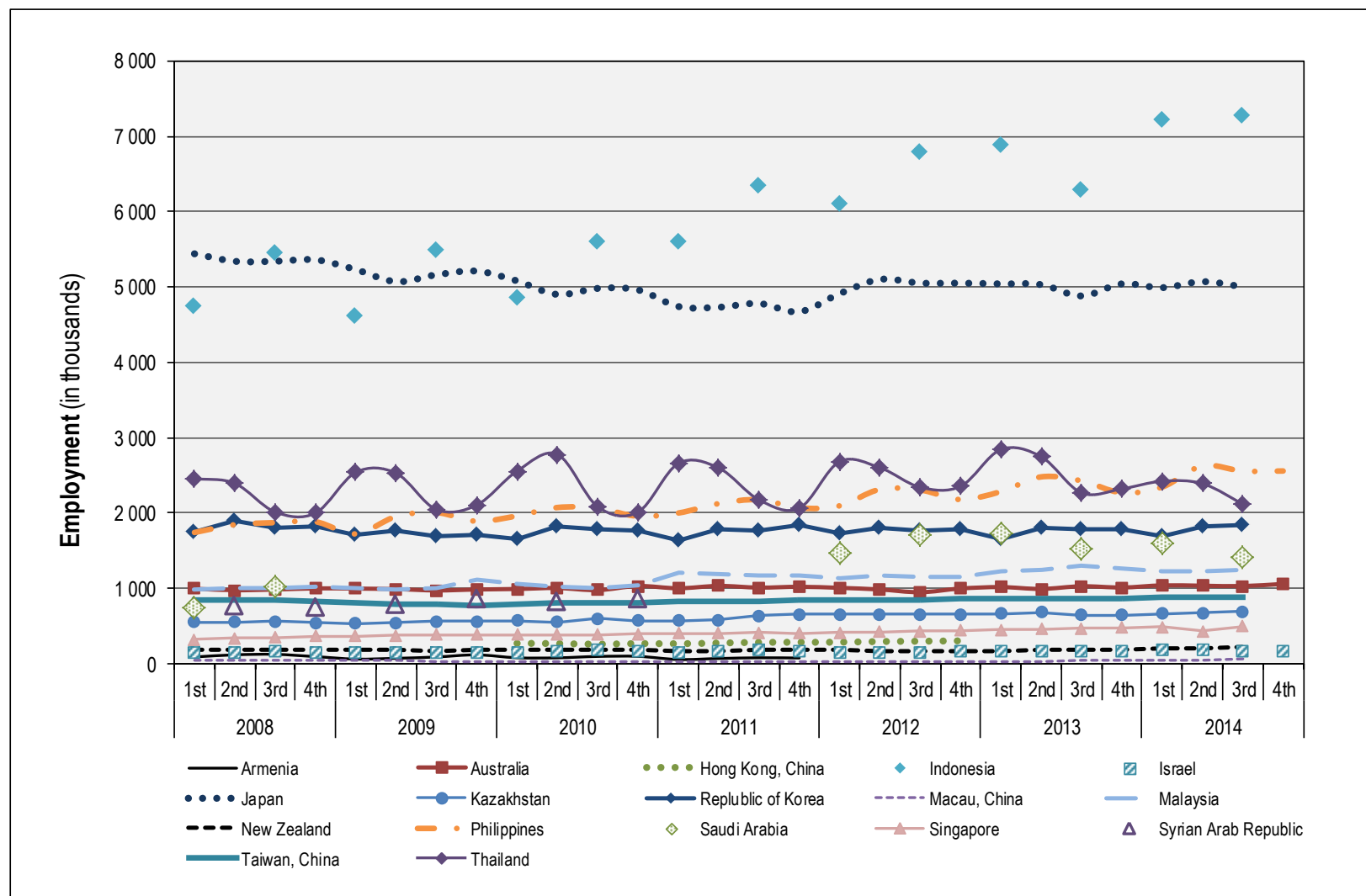
The scarcity of data makes it difficult to assess trends in construction industry employment in Africa (figure 1.3(b)). In the case of South Africa, construction employment decreased by 151,000 workers between the first quarters of 2008 and 2012 and increased by 218,000 workers from that point until the last quarter of 2013. In South Africa, a special programme was established in 2004 called the Expanded Public Works Programme, designed to bridge the employment gap between the so-called “first” and “second” economies, targeting the poorest strata. Phase 1 achieved its target of 1 million work opportunities by 2008 and Phase 2 achieved 4.5 million work opportunities by mid-2014. The target for Phase 3 is 6 million over the next five years.

Overall, employment opportunities may be generated in the following years throughout Africa due to the expected 70 per cent growth in its urban population, the continent’s increasing housing needs and significant investments in infrastructure.¹³

¹³ Global Construction Perspectives and Oxford Economics: *Global Construction 2025*, op. cit.

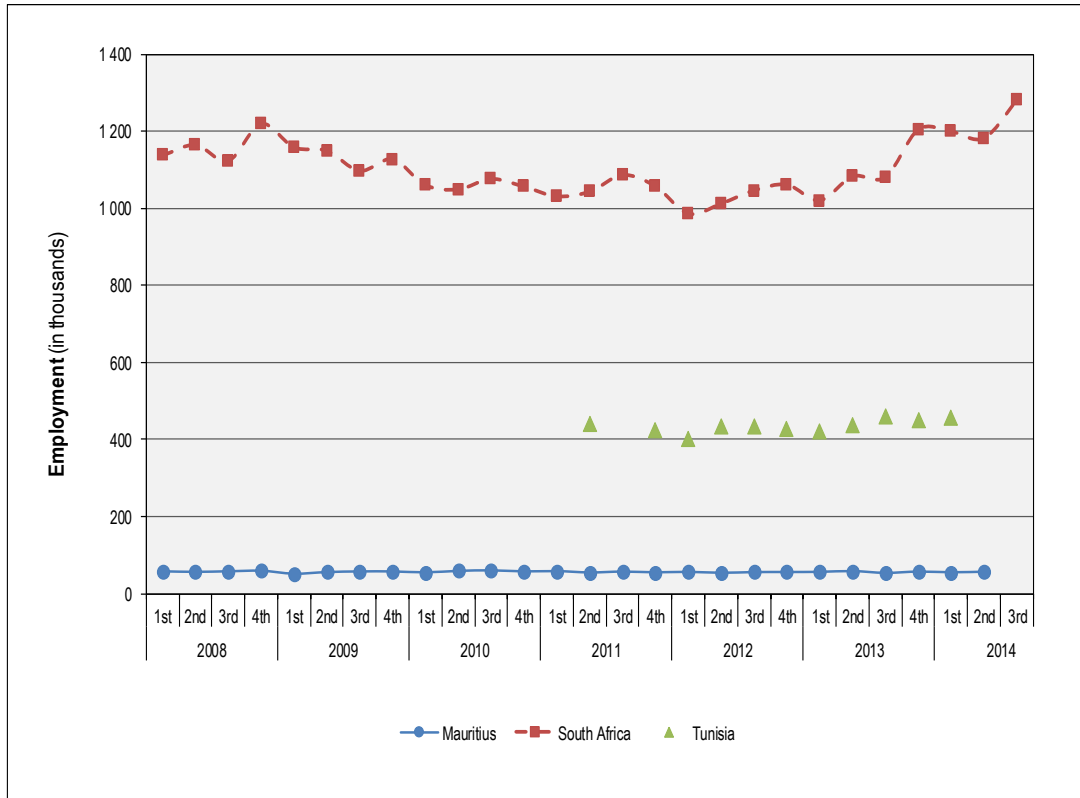
Figure 1.3. Employment in construction in Asia and Africa, 2009–14 (first quarter 2008–fourth quarter 2014 by thousands/quarters)

1.3(a). Asia



Source: ILO: *Short-term indicators of the labour market*, ISIC-4.

1.3(b). Africa



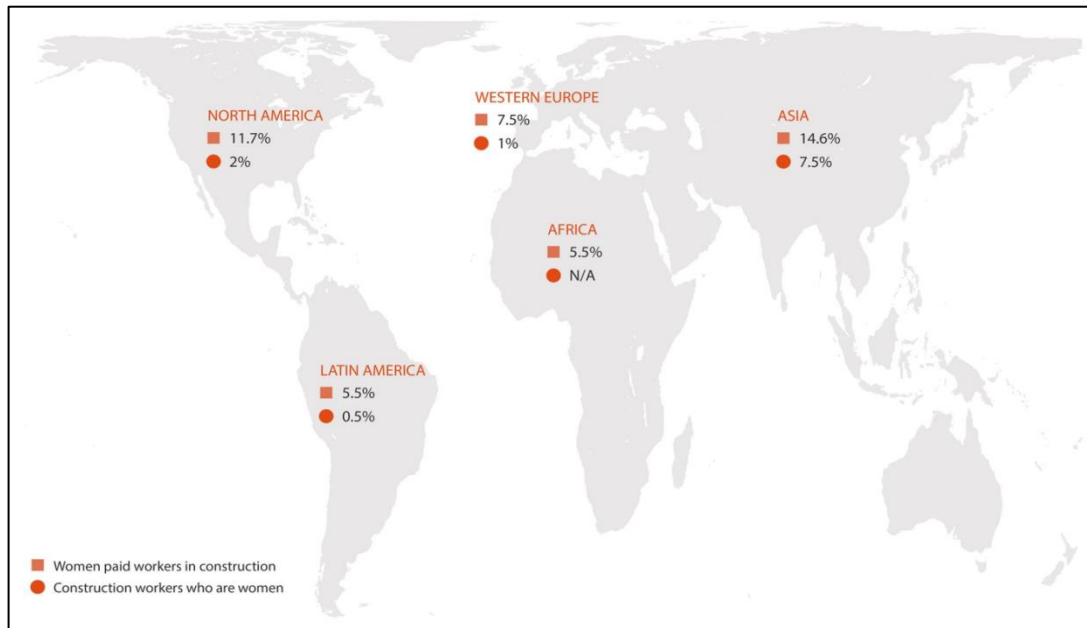
Source: ILO: *Short-term indicators of the labour market, ISIC-4.*

Female participation

Despite steady increases, the participation of women in construction remains lower than in many sectors. Equal opportunities have not been achieved.¹⁴ Women are sometimes employed as part of a family work unit, often without receiving direct payment. Figure 1.4 shows the rate of women’s participation in the construction sector and the percentage of all women paid workers in construction, by region.

¹⁴ Forbes Insights: *Diversity & Inclusion: Unlocking global potential: Global Diversity Rankings by Country, Sector and Occupation*, Jan. 2012.

Figure 1.4. Women in construction: Regional differences



Note: "Women paid workers in construction" denotes the share of paid women working in the construction sector, out of female workers in all sectors. "Construction workers who are women" denotes the share of women workers out of all workers in the construction industry.

Source: ILO: *Yearbook of Labour Statistics*, several years.

The rate of women's participation in the construction sector in Asia is higher than in other regions. The high shares of women in some countries, such as Kazakhstan (23.5 per cent), Singapore (22.9 per cent), Mongolia (21.1 per cent) and Ethiopia (17.8 per cent), can be partly explained by women working in administrative, human resources, clerical and other office-related and technical areas of work.¹⁵

A study of informal construction workers in Dar es Salaam (United Republic of Tanzania) revealed that only 4 per cent of the total population of workers were women.¹⁶ Their main roles included stone crushing, selling food to workers on construction sites and working in offices as storekeepers and cleaners. Thus, very few women worked in direct construction occupations, such as masonry, carpentry or electricity.

However, this is not the case in several countries in South Asia, where women do represent a very significant proportion of the on-site construction workforce. Women may represent up to 50 per cent of the workforce on some sites in India. Most of these female workers (92 per cent) are engaged in load carrying, the rest being in semi-skilled work, including plastering or concrete mixing. Furthermore, 93.6 per cent of the women workers in question are engaged as casual labourers.¹⁷ Research¹⁸ into 43 of the ILO's

¹⁵ ILOSTAT database.

¹⁶ A. Jason: *Informal construction workers in Dar es Salaam, Tanzania*, Sectoral Activities Department, Working Paper No. 226, ILO, Geneva, 2005.

¹⁷ Self-Employed Women's Association: *Globalization and economic reform as seen from the ground: SEWA's experience in India*, Ahmedabad, India, Dec. 2002.

employment-intensive public works projects implemented in 27 countries between 1995 and 2013, which included field work in South Africa and Madagascar, concluded that nearly half of the projects analysed specified minimum quotas for women's participation, some as high as 50 per cent. Female representation in the projects ranged from 0 to 81 per cent. More than half of the projects reviewed achieved the critical mass of 30 per cent female representation.

Recent trends in women's participation in the industry have been mixed. In some countries participation has increased, while in others women have suffered the effects of the global crisis.¹⁹ Between 2009 and 2013, the share of women in total employment increased in 32 countries (for example Panama, Uruguay and Greece) but declined in another 39 (for example Ethiopia, Lithuania, Russian Federation and Serbia).

Technology advancement

Technological innovations have cut across different subsectors of the industry.²⁰ This section will present three developments: off-site construction, green technology and nanotechnology.

Off-site construction²¹

Off-site construction responds to the need of construction firms to increase productivity while controlling costs, improve quality and efficiency (as well as energy efficiency), and expand operations in the export market.²² The manufacture of components off site has existed for a number of decades and is substantially more advanced in countries such as Australia, Japan, Malaysia, New Zealand, the United Kingdom and the United States, as well as in the Scandinavian countries. For example, 12 per cent of construction in the United Kingdom takes place off site and includes the manufacture of pods, "kit" homes and panelized systems. It is predicted that off-site construction is likely to increase in the coming years and the construction industry will further integrate with the manufacturing industry.

¹⁸ N. Tanzarn and M.T. Gutierrez: *Public works programmes – A strategy for poverty alleviation: The gender dimension revisited in employment-intensive investment programmes in 30 countries in Africa, Asia, Latin America and the Caribbean*, ILO Working Paper, pending publication.

¹⁹ Building and Wood Workers' International (BWI): *Building Women Power through Trade Unions*, Research Study on Women in the BWI Sectors, Geneva, 2014.

²⁰ J. Roca: "Preparing for new challenges", in *Construction Today*.

²¹ This term refers to structures built at a different location to the site where the building is assembled.

²² M. Taylor. "A definition and valuation of the UK offsite construction sector", in *Construction Management and Economics*, Vol. 28(8), pp. 885–896, 2010; European Commission: *Innovative technologies for buildings: EU-funded research to transform the construction sector*, Directorate-General for Research and Innovation, 2009.

Off-site construction may also create employment opportunities in developing countries in the future, especially in housing delivery.²³ However, some argue that there are barriers to the manufacture of building components off site in developing countries such as China. These include the absence of regulations and incentives, and high initial costs.²⁴

Increased off-site production will involve the creation of new skilled jobs in manufacturing plants, in the assembly of factory-made components and in the integration of these with traditionally crafted components. However, prefabrication will chiefly result in fewer employment opportunities in both low-skilled and traditional craft jobs on construction sites. According to the South African Construction Industry Development Board (CIDB) a brickwork house may generate up to 3.5 times more person-hours of employment than an equivalent prefabricated concrete house.²⁵

Green technology

Future technological advancements will be needed to improve the sustainability and cost-effectiveness of processes and materials. The most important factors driving this process will be ongoing urbanization and higher environmental standards, including lower CO₂ emissions, better use of natural resources and less waste. From new energy-efficient building to the refurbishment of existing buildings, the construction industry can play a crucial role towards sustainable development. Refurbishment projects offer great opportunities for job creation. It is estimated that for every US\$1 million invested in building retrofits, ten to 14 direct jobs and three to four indirect jobs are created.²⁶ In the United States, green construction provided over 2.4 million jobs between 2000 and 2008, a figure that was projected to grow. The renovation of 40 per cent of building stock is estimated to create 6,250,000 jobs over a period of ten years.²⁷ A large-scale renovation programme in Germany, which was initiated jointly by trade unions, employers and non-governmental organizations, has mobilized investments of almost €100 billion since 2006 and maintains as many as 300,000 jobs in the building industry.²⁸

²³ S.J. Kolo et al.: “Offsite manufacturing construction: A big opportunity for housing delivery in Nigeria”, in *Procedia Engineering*, Vol. 85, 2014, pp. 319–327.

²⁴ C. Mao et al.: “Major barriers to off-site construction: The developer’s perspective in China”, in *Journal of Management in Engineering*, Vol. 31(3), May 2015.

²⁵ CIDB: *Labour-based methods and technologies for employment-intensive construction works: A CIDB guide to best practice*.

²⁶ P. Rode et al.: “Buildings: Investing in energy and resource efficiency”, in United Nations Environment Programme: *Towards a green economy: Pathways to sustainable development and poverty eradication: A synthesis for policy makers*, Nairobi, 2011, pp. 331–373.

²⁷ B. Hendricks et al.: *Rebuilding America: A national policy framework for investment in energy efficiency retrofits*, Center for American Progress and Energy Future Coalition, United States, 2009.

²⁸ ILO: *Sustainable development, decent work and green jobs*, Report V, International Labour Conference, 102nd Session, Geneva, 2013.

Nanotechnology²⁹

Nanotechnology can potentially impact employment opportunities as well as the safety and health of workers. It is already being applied in buildings, from nanoparticle paint used to prevent corrosion, to thermochromic glass used to regulate the influx of light. According to the International Council for Research and Innovation in Building and Construction, nanotechnology can improve the usability, versatility, strength, endurance and weight of materials, reducing costs for companies. Nonetheless, the long-term effects on construction employment are still unclear.³⁰ Furthermore, the introduction of nanomaterials into the construction industry requires construction health and safety professionals to learn from experts in the health industry and the materials manufacturing sector. It is important to monitor the development of trends in this regard (see also chapter 3).

²⁹ This is the branch of technology that deals with dimensions and tolerances of less than 100 nanometres, especially the manipulation of individual atoms and molecules.

³⁰ A. Finneran and A. Gibb: *W099: Safety and health in construction research roadmap: Report for consultation*, International Council for Research and Innovation in Building and Construction (CIB) Publication 376, CIB General Secretariat, 2013, p. 4.

2. Promotion of decent and productive work through vocational education and training

Education and training are essential to meeting the skills gap in the construction industry. They provide workers with the knowledge necessary to carry out their work and they increase employability. Training is also an important factor behind occupational safety and health (OSH) improvements and increased labour productivity, which may in turn raise wages.

Many employers report difficulties in finding skilled workers. This is partly due to skills gaps and deficits, as training programmes are sometimes out of date and do not always meet the needs of the industry. Labour shortages may also result from low wages, poor working conditions, poor recruitment policies and/or a mismatch between skills and job locations.¹ The construction industry has historically faced a shortage of qualified workers due to limited training and high turnover rates, as many qualified workers change sectors or migrate to other countries in search of better employment opportunities.

This chapter will present selected challenges related to skills faced by the industry, followed by a number of good practices.

Skills shortage

The global financial crisis exerted downward pressure on labour demand in many countries. Surveys conducted by the Construction Industry Training Board in the United Kingdom indicated a decline in the skills gap from 10 per cent in 2009 to 4 per cent in 2011.² In countries that had benefited from large investments in the housing market prior to the crisis, the employment loss in the sector has led to declines in demand for both skilled and low-skilled workers.^{3,4} Nevertheless, skill shortages are likely to increase in the long run, due to changes in technology and a reduced supply of labour in developed economies. Table 2.1 presents estimates of future skill shortages in various countries.

¹ World Economic Forum: *Matching skills and labour market needs: Building social partnerships for better skills and better jobs*, 2014.

² Construction Industry Training Board: *Training and Skills in the Construction Sector*, 2011.

³ ILO: *Global Employment Trends 2014: Risk of a jobless recovery*, Geneva, 2014, p. 37.

⁴ Aparicio. (2010). "High-School Dropouts and Transitory Labor Market Shocks: The Case of the Spanish Housing Boom". Available at: <http://ftp.iza.org/dp5139.pdf>.

Table 2.1. Estimate of accumulated labour requirements in the construction sector in the coming years

Country	Accumulated labour requirements	Projection years
Germany	700 000	2009–21
United Kingdom	480 000	2009–21
Italy	440 000	2009–21
India	47 000 000	2008–22
Canada	250 000	2013–21

Source: Data for Germany, Italy and the United Kingdom from The Danish Technological Institute: *Future Qualification and Skills Needs in the Construction Sector*, July 2009; India from the National Skill Development Corporation: *Human Resource and Skill Requirements in the Building, Construction and Real Estate Services Sector: Study on mapping of human resource skill gaps in India till 2022*; and Canada from BuildForce Canada, 2015.

Skills shortages affect a wide range of occupations and cover all phases of the construction cycle. Shortages of medium-skilled construction workers are particularly acute in developed economies, while in developing countries there are shortages of both high- and medium-skilled workers.^{5,6}

In a report commissioned by the European Commission in 2009, the Danish Technological Institute identified the main skills shortages in Europe.⁷ Specific management-level shortages were identified in planning skills and knowledge of procurement forms, as well as in social, negotiation, and communication skills. Workers lack skills in green solutions, including solar thermal energy, rainwater harvesting, air source heat pumps, micro fuel cells, and wood-fuelled heating (biomass), as well as in a broader set of literacy, numeracy, and Information and Communications Technology (ICT) skills. Skills shortages among low-skilled workers include a lack of knowledge about different trades (and the associated materials and technologies) as well as of basic reading, writing and arithmetic.

Skills gaps in developing countries vary from country to country, due to different technological patterns and employment structures. For instance, 83 per cent of the construction workforce in India is composed of unskilled workers.⁸ According to the National Skill Development Corporation, the main skills gaps in India at the management level are at the planning stage, including weak capacity to estimate project costs.⁹ At the technical level there is inadequate knowledge of specific tasks – such as lining, levelling and finishing skills in carpentry – and lack of knowledge about machine operation.

⁵ Danish Technological Institute: *Future Qualification and Skills Needs in the Construction Sector*, July 2009.

⁶ National Skill Development Corporation: *Human Resource and Skill Requirements in the Building, Construction and Real Estate Services Sector: Study on mapping of human resource skill gaps in India till 2022*.

⁷ Danish Technological Institute, op. cit.

⁸ R. Hajela: *Shortage of skilled workers: A paradox of the Indian Economy*, SKOPE Research Paper No. 111, Nov. 2012 (University of Oxford/ESCR Centre on Skills, Knowledge and Organisational Performance/University of Oxford).

⁹ National Skill Development Corporation: *Human Resource and Skill Requirements in the Building, Construction and Real Estate Services Sector*, op. cit.

Unskilled workers generally lack safety orientation, general workplace skills and the ability to follow technical instructions.

Demography

Demographic changes occurring in many countries mean an increased rate of retirement of construction workers, with the resulting need to train and hire new workers. According to *World Population Ageing*, the number of people aged 60 or over is expected to increase from 841 million to more than 2 billion between 2013 and 2050. By 2047, the global population aged 60 and over will exceed the number of people aged 15 and under for the first time in history.¹⁰

Experienced workers are generally replaced by less experienced ones. It is therefore necessary to meet the current and future skills challenge¹¹ by formulating integrated policies, developing a training strategy, promoting quality apprenticeships, increasing the reliance on the local workforce, and attracting young people and women to the industry.

Meeting the skills challenge

Developing a training strategy for construction

Efforts by construction companies working independently to create a large skilled workforce have had limited success. The development of a coherent industry-wide training strategy at national or regional level, adjusted to the ILO's international standards and principles, and with financial contributions from both governments and enterprises, would be an important step forward.

Training should be inclusive, and should incorporate the familiarization of workers with their rights and OSH regulations.

The ILO framework for skills development is outlined in the Human Resources Development Recommendation, 2004 (No. 195), and is further developed by the Conclusions on skills for improved productivity, employment growth and development, adopted at the 97th Session of the International Labour Conference in 2008. The Conclusions provide further guidance on how Recommendation No. 195 can support the development of policies to strengthen the linkages between skills, productivity, employment, development and decent work. Skills development policies should have three objectives:

- (a) to match supply to current demand for skills;
- (b) to help workers and enterprises adjust to change; and
- (c) to build and sustain competencies for future labour market needs.

¹⁰ United Nations: *World Population Ageing 2013* (New York, 2013).

¹¹ Chapter 1 mentioned such technological changes as off-site production, green construction and nanotechnology; skills training will need to take them into account.

Following the 97th Session of the International Labour Conference in 2008 and the G20 Pittsburgh Summit in 2009, the ILO developed the G20 Training Strategy, which aims to provide guidance on developing a suitably skilled workforce for the future, and ultimately achieving decent work in sustainable enterprises.¹² The implementation of the G20 Training Strategy involved the creation of a knowledge-sharing platform to provide information on training and skills strategies, policies and systems.¹³

Drawing on the work of national agencies, the European Commission, together with the European sectoral social partners in the construction industry (the European Federation of Building and Woodworkers and the European Construction Industry Federation) initiated the work necessary to set up an EU Sector Skills Council for the construction industry, which is a good example of a tripartite strategy. The main function of the body is to act as a “platform for coordination of national initiatives, for the exchange of experiences and best practice and for networking”.¹⁴

Institutions in many countries (including Argentina, Australia and Spain) define and update the different skill profiles for professionals in the construction sector. In Chile, the Government put forward the National Labour Competency Certification System Tripartite Committee, or ChileValora. It has a collegial body in which worker and employer representatives participate, together with representatives from the ministries of education, labour and economics. The objective of the Committee is to define system policies and occupational profiles.

Promoting quality apprenticeships

The skills produced in the education system need to match the skills in demand in the labour market.¹⁵ Training will be lost for the industry as workers change sectors or migrate to other countries in search of better employment opportunities. An important tool that may avoid these problems is an apprenticeship programme, as employers are unlikely to take on apprentices unless the skills are needed. However, informal apprenticeships are widespread in developing countries and the ending of closed shops and the decline in union memberships have led to a decline in employer-funded apprenticeships.¹⁶

In many developing countries, there is scope for improvement in terms of education and training for construction workers. In Brazil, only 28 per cent of construction workers have participated in some form of training programme, 20 per cent have completed primary education and 20 per cent are illiterate.¹⁷ In India, many construction workers are

¹² ILO: *A Skilled Workforce for Strong, Sustainable and Balanced Growth: A G20 Training Strategy*, Geneva, 2010.

¹³ ILO Global Public-Private Knowledge Sharing Platform on Skills for Employment (Global KSP).

¹⁴ G. Syben: *Final Report, European Sectors Skills Council in the Construction Industry – Feasibility study*, BAQ Forschungsinstitut für Beschäftigung Arbeit Qualifikation, Mar. 2013, at <http://www.efbww.org/pdfs/ESSC%20Final%20report%20and%20annexes%20GB.pdf>.

¹⁵ ILO: *A Skilled Workforce for Strong, Sustainable and Balanced Growth*, op. cit.

¹⁶ ILO: *The construction industry in the twenty-first century*, op. cit.

¹⁷ J. Moreira Lima Júnior et al.: *Segurança e Saúde no Trabalho da Construção: experiência brasileira e panorama internacional*, ILO (Brazil), 2005, p. 12.

illiterate. A 1999 study found that 69 per cent of construction workers in Delhi, 56 per cent in Pune and 40 per cent in Mumbai had had no schooling.¹⁸ In India as a whole, only 3–5 per cent of blue collar workers have acquired formal training and/or certification.¹⁹ However, many acquire some skills through informal apprenticeships, often in family groups. Informal apprenticeships may serve as an important instrument in reducing skills shortages.

Moving to greater reliance on local skilled workforces

Construction companies operate in various locations. Since mobilizing and transferring workers is costly, most companies recognize the importance of relying on the local workforce if the required skills and experience are available. When skilled workers are not available locally, it may be necessary to rely on expatriates, but differences in national vocational education and training systems may make the transfer of skills difficult. In many cases, there is a skills mismatch between internationally widely accepted qualification systems and national qualification systems.²⁰

One ILO initiative, which includes the training of a local workforce, is the Enhancing Rural Access (ERA) Project. Funded by the European Union, the ERA Project aims to improve access to rural areas in Timor-Leste through the rehabilitation and maintenance of around 140 km of rural roads in selected parts of the country. A principal aspect of the project is the training of local civil works contractors and contract managers in the business management and technical skills required for labour-based technology. A total of 123 companies participated in the technical training in 2013 and 78 company directors participated in the business management training.²¹

Attracting young people into the industry

Construction companies compete to attract young workers by offering career opportunities in the industry. However, many young people feel discouraged by low entry-level wages, changing working conditions and places of work, and the discontinuous employment caused by boom and bust cycles in the sector.²² In many countries, not all

¹⁸ K. N. Vaid: “Contract labour in the construction industry in India”, in D.P.A. Naidu (ed.): *Contract labour in South Asia*, Geneva, ILO, Bureau for Workers’ Activities, 1999.

¹⁹ National Skill Development Corporation: *Human Resource and Skill Requirements in the Building, Construction and Real Estate Services Sector*, op. cit.

²⁰ P. Elias and A. McKnight: “Skill measurement in official statistics: Recent developments in the UK and the rest of Europe”, in *Oxford Economic Papers*, Special Issue on Skills Measurement and Economic Analysis (Oxford, Oxford University Press), Vol. 53, No. 3, 1 July 2001, pp. 508–540.

²¹ ILO: *ILO Works in Timor-Leste: 2013 results*, Jakarta, 2014.

²² World Economic Forum: *Matching skills and labour market needs*, op. cit.

graduates of formal training programmes may have access to the private construction industry, and will find jobs in the public sector or in another industry.²³

In 2013, the International Organisation of Employers, together with the Business and Industry Advisory Committee to the Organisation for Economic Co-operation and Development (OECD), launched the Global Apprenticeships Network. This initiative promotes employment opportunities for young people through apprenticeships. Its activities include advocacy and the sharing of best practices. The network benefits from the participation of many construction companies.

Attracting women workers into the industry

Despite steady increases, the participation of women in construction remains lower than in many sectors and gender parity is far from being achieved.²⁴ It is sometimes argued that attracting and recruiting women could help reduce the existing skills gap in the industry, but this seems unlikely as women often suffer discrimination and there is widespread scepticism regarding their ability to undertake skilled construction work. While women form up to 50 per cent of the construction workforce in India, they are generally still regarded as unskilled workers and “helpers” to the men, irrespective of the length of time they have worked in the industry and the level of skill they have acquired.²⁵ However, organizations such as the Self-Employed Women’s Association of India are working hard to change this situation (see box 2.1).

Box 2.1

Training self-employed women in the Indian construction sector

The Self-Employed Women’s Association has been striving to improve the employability, productivity and working conditions of self-employed women workers in the Indian construction sector through training courses that teach women workers about new state-of-the-art technology used by multinational construction companies. Since 2003 they have been taught at the Karmika School for Construction Workers in Gujarat. Following the success of the training, it has been extended to other Indian regions.

Source: Building and Wood Workers’ International (BWI): *Building Women Power through Trade Unions*, Research Study on Women in the BWI Sectors (Geneva: 2014).

There are other challenges to recruiting more women into the construction industry, even in developed countries. According to the Building and Wood Workers’ International (BWI) report *Building Women Power through Trade Unions*, female participation is hindered by the male-focused culture and practices that predominate in the industry and influence many aspects of daily life and work, such as the perception that women working in construction prefer unskilled work.²⁶

²³ R. Assaad: “Formal and informal institutions in the labor market, with applications to the construction sector in Egypt”, in *World Development*, Oxford, Pergamon Press, 1993 Vol. 21, No. 6, pp. 925–939.

²⁴ J. Wells: “Informality in the construction sector in developing countries”, in *Construction Management and Economics*, 2007, Vol. 25, No. 1, pp. 87–93.

²⁵ BWI: *Building Women Power through Trade Unions*, op. cit.

²⁶ *ibid.*

3. Occupational safety and health

Approximately one in six fatal accidents reported globally takes place in the construction sector, amounting to 60,000 fatal accidents per year. The intrinsically hazardous nature of the work, multiple locations of construction sites, changing work environments and high rates of staff turnover make construction a dangerous industry. There are also health problems associated with construction activities. The management of safety and health is challenging due to variations in location, technology, climate, culture, values and languages spoken.

Yet, accidents and health problems can be prevented. Governments, employers and workers have a common interest in promoting OSH. Improved organizational methods and technology could be introduced on site in order to improve workers' safety and health. This, in turn, may improve worker productivity, reduce staff turnover, and lessen insurance, compensation and legal costs.

This chapter presents data on occupational accidents and diseases in construction. It also highlights good practices developed by governments and employers' and workers' organizations and proposes ways forward.

Comparison of fatal accident rates

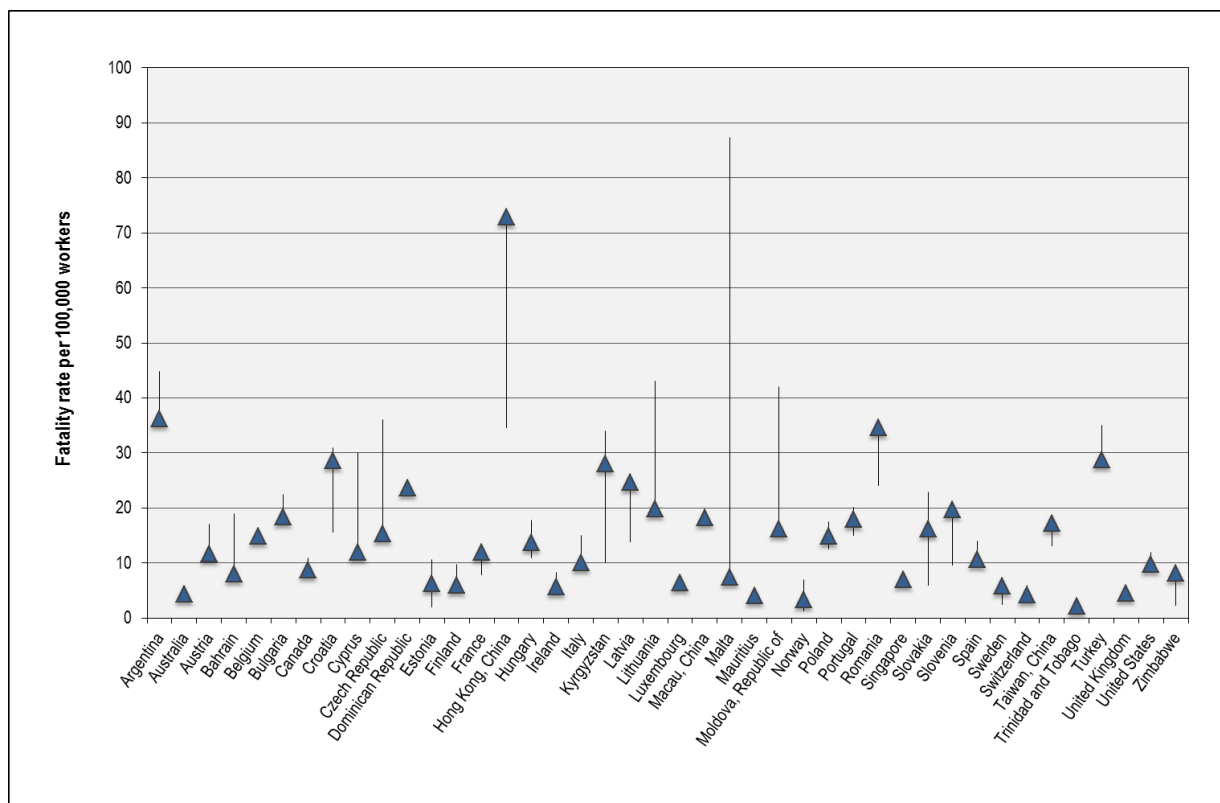
OSH data is scarce and comparability is difficult due to differences in collection and interpretation. Accident and incident statistics are commonly used indicators. However, statistics often suffer from under-reporting and missing data, due to lack of insurance coverage, which means that reports of accidents are frequently not filed. Furthermore, some countries that include insured workers in their statistics may include all reported cases, while others only include cases that result in the payment of compensation.¹

Data on safety and health performance is collected by the ILO from different governmental sources, including insurance records, censuses of occupational injuries, incident reporting, and surveys. Thus, international comparisons should be made with caution. Figure 3.1 provides information on fatality rates in the construction sector for several countries, showing stark differences among them. There is little reliable evidence from the least developed countries, but it is estimated that fatality rates may be more than double the rates in developed economies.

Fatality rates also vary from year to year and it is difficult to detect the causes of such changes. The bars in figure 3.1 indicate minimum and maximum fatality rates in the years between 2004 and 2008, while the triangles indicate the latest values. It can be seen that countries experienced mixed trends: while fatality rates in some (for example Argentina, Bulgaria, Czech Republic, Kyrgyzstan, Lithuania, Malta and Switzerland) noticeably declined, they rose sharply in others (for example Croatia, Romania, Slovakia, Slovenia, Sweden and Zimbabwe).

¹ ILO: *The construction industry in the twenty-first century*, op. cit.

Figure 3.1. Fatality rates in various countries, 2004–08



Notes: Worker coverage is expressed per 100,000 workers employed; per 100,000 employees; per 100,000 workers insured; and per 100,000 full-time equivalent employees. Changes in Hong Kong have been attributed to metro works.
 Source: Laborsta, ILO, accessed 23 June 2014.

Fatal accidents vary significantly by occupation. Some tasks can be ten to 100 times more hazardous than others.² A recent report³ by the United Kingdom Health and Safety Executive found that the workers associated with the highest number of fatalities are roofers, construction operatives, elementary construction workers, carpenters and joiners. Moreover, the report found that fatalities are mainly caused by falls from heights (approximately 45 per cent), contacts with machinery or electricity, and being struck by objects and moving vehicles (each 7 per cent). Less frequent causes of fatal accidents at work are slips, trips and falls on the same level.

Non-fatal accidents

According to a recent ILO report, most non-fatal injuries are associated with activities related to material handling and installation (for example, drywall, piping and ventilation-duct installation) and injuries occurring while moving about on site (for example, walking,

² Weeks: “Health and safety hazards in the construction industry”, op. cit.

³ Health and Safety Executive: *Health and safety in construction in Great Britain, 2014*.

climbing, descending).⁴ Other common causes of non-fatal accidents are similar to those leading to fatalities and are often associated with shortcomings in housekeeping.⁵

In the United Kingdom, non-fatal accidents are disaggregated into major injuries and non-major injuries. Between 2005 and 2014, the annual number of major injuries per 100,000 workers fell from 275 in 2005–06 to 150 in 2013–14.⁶ A total of 31 per cent of major injuries were caused by falls from height, another 27 per cent by slips, trips and falls on the same level, 13 per cent by being struck by moving or falling objects and 9 per cent were handling injuries. Non-major injuries also declined from 500 to 397 per 100,000 workers between 2005 and 2012. The most common reported causes of non-major injuries were: handling and lifting (30 per cent), slips, trips and falls on the same level (21 per cent), falls from heights (11 per cent), and moving or falling objects (11 per cent). The occupations with most reported non-fatal major injuries were construction operatives, elementary construction operatives, carpenters, joiners, electricians and electrical fitters.⁷

Occupational diseases

Common health problems in construction work include deafness, musculoskeletal disorders and exposure to hazardous substances, such as asbestos. These problems are exacerbated in developing countries, where exposure to hazardous substances is more acute.

Construction workers are exposed to a wide variety of hazards, which may differ by region, occupation and even time of day. A 2011 ILO study on health and safety hazards⁸ identified the main hazards to which skilled construction workers are exposed (table 3.1). Exposure to these hazards is typically recurrent but of short duration.

Table 3.1. Main hazards to which skilled construction workers are exposed in selected occupations

Occupations	Hazards
Brick masons	Awkward postures, heavy loads, exposure to cement
Hard tile setters	Vapour from bonding agents, dermatitis, awkward postures
Carpenters	Wood dust, heavy loads, repetitive motion
Drywall installers	Plaster dust, walking on stilts, heavy loads, awkward postures
Electricians	Heavy metals in solder fumes, awkward postures, heavy loads, asbestos dust
Painters	Solvent vapours, toxic metals in pigments, paint additives
Plasterers	Dermatitis, awkward postures
Plumbers	Lead fumes and particles, welding fumes
Pipefitters	Lead fumes and particles, welding fumes, asbestos dust

⁴ Weeks: “Health and safety hazards in the construction industry”, op. cit.

⁵ Many strains and sprains often become sources of chronic pain and impairment.

⁶ Health and Safety Executive: *Health and safety in construction in Great Britain, 2014*.

⁷ *ibid.*

⁸ Weeks: “Health and safety hazards in the construction industry”, op. cit.

Occupations	Hazards
Insulation workers	Asbestos, synthetic fibres, awkward postures
Roofers	Roofing tar, heat, working at heights
Welders	Welding emissions
Solderers	Metal fumes, lead, cadmium
Drillers – earth, rock	Silica dust, whole-body vibration, noise
Crane and tower operators	Stress, isolation
Excavating and loading machine operators	Silica dust, histoplasmosis, whole-body vibration, heat stress, noise
Grader, dozer and scraper operators	Silica dust, whole-body vibration, heat, noise
Road and street construction workers	Asphalt emissions, heat, diesel engine exhaust
Truck and tractor equipment operators	Whole-body vibration, diesel engine exhaust
Demolition workers	Asbestos, lead, dust, noise

Source: J. Weeks: "Health and safety hazards in the construction industry", 2011, in *Encyclopaedia of Occupational Health and Safety*, Part XVI–Construction, Geneva, ILO.

Good practices of governments

National governments have put forward important initiatives to increase safety and health compliance. For instance, in 2014 the South African Department of Labour passed a new regulation that provides a legislative platform to address safety and health issues during all phases of a project, particularly during initiation and detailed design phases. The new regulation redistributes responsibility for construction OSH away from the contractor, who was previously solely responsible, to include all participants in the construction process, from the client through to the final end user. Clients have a pivotal role in setting and achieving high standards, as they have overall control of contracts, how projects are undertaken, and selecting designers and contractors. The engagement of clients with companies to achieve high OSH standards has been discussed and proposed.^{9, 10} The new regulation also establishes the registration of construction OSH professionals in three categories: construction safety and health agent, construction safety and health manager, and construction safety and health officer.¹¹

Box 3.1

Monitoring working conditions in infrastructure construction works in Brazil

In 2012, the Brazilian Ministry of Labour and Employment created the *Grupo móvel de auditoria de condições de trabalho em obras de infra-estrutura* [mobile group for the monitoring of working conditions in infrastructure construction works] to monitor and evaluate infrastructure construction works – including those relating to the 2014 World Cup. The aim of the group was to prevent labour infractions in infrastructure works, specifically in respect of OSH, through various meetings and on-site inspections.

Source: ILO: Good practices in promoting decent work in the 2014 World Cup, consulting report, 2013 (not yet published).

⁹ An example of this is the *Training package in occupational safety and health for the construction industry* produced by the ILO (SECTOR in collaboration with SAFEWORK) in 2009.

¹⁰ United Kingdom Health and Safety Executive: *Revitalising Health and Safety in Construction: Discussion document*, 2002.

¹¹ CIDB: *Construction Health & Safety in South Africa: Status and Recommendations*, 2013.

The expansion of nanotechnology in the construction and other sectors, and its particular challenges for health and safety, were discussed during the 104th Session of the International Labour Conference (see also chapter 1). According to a Conference report:

[i]n 2011, the European Commission issued a recommendation on the definition of nanomaterial and, in 2012, it launched a regulatory review on nanomaterials and created a nano subgroup of the chemicals working party set up under the Advisory Committee on Safety and Health at Work in order to draft an opinion on risk assessment and management of nanomaterials in the workplace. It is expected that this will lead to a final assessment on a review of OSH legislation and that legal developments with regard to nanomaterials, including OSH aspects, are likely to occur soon in the EU.¹²

Good practices of employers' organizations

A good example of how employers can work collaboratively is the promotion of a safety and health culture by the European Construction Industry Federation. In 2010, it released the *Guide for developing a health and safety management system*,¹³ which provides companies with a common OSH management policy. The guide helps companies of all sizes to implement strategies to anticipate safety and health problems that may arise at the workplace.

The Chilean Construction Chamber has periodically published reports with examples of good practices of risk prevention in the industry. Furthermore, it organizes courses related to safety and health for member companies. One example is a course on fundamental skills training in OSH, which covers issues on legislation and proceedings, ways to evaluate and apply prevention measures, and the expected behaviours of all actors.¹⁴

Master Builders South Africa provides substantive safety and health services to its members. This employers' association produced an OSH manual for construction sites, which is used as a training tool by the South African Department of Labour. The manual is also used in training programmes, such as one for construction managers, organized jointly by the University of the Free State and Gauteng Master Builders Association.

Good practices of workers' organizations

In 2010, the European Federation of Building and Woodworkers launched the Safety and Health Asbestos campaign, which aims to eradicate all asbestos existing in Europe by 2023. The campaign recommends several strategies, including measures to train workers dealing with asbestos, registration of products containing asbestos, recognition of asbestos-related diseases, and compensation procedures.

The Trade Union of Civil Engineering, Industry and Planning of the former Yugoslav Republic of Macedonia has developed initiatives specifically to assess safety and health

¹² ILO: *Labour protection in a transforming world of work*, Report VI, International Labour Conference, 104th Session, Geneva, 2015, p. 37.

¹³ Available at <http://www.fiec.eu/en/themes-72/health-and-safety.aspx>.

¹⁴ http://www.cchc.cl/centro-de-informacion/publicaciones/publicaciones_otras_publicaciones.

issues for women. It has run seminars on ways to prevent accidents, with 100 women from the construction sector participating in a seminar held in 2011 in Lesok. The union also organized seminars to identify measures to prevent violence against women.¹⁵

The BWI conducts various campaigns at the national and international levels to improve workers' safety and health. In 2013, for example, the BWI launched a global campaign called "25 Kilos – Not More!". The aim of the campaign is to convince cement and aggregates manufacturers to reduce the weight of cement bags to 25 kilos, in order to prevent manual handling injuries, and in particular lower back injuries of construction workers.

Another good example provided by the BWI is its initiative to improve workers' safety and health in the construction of the Bujagali Dam in Uganda, with the involvement of partner trade unions. Strategies include the training of site union organizers, the creation and training of a site safety and health committee, visits to large construction sites for practical inspections, and interviews with management and workers. More generally, workers were given OSH training and related equipment at the workplace.

Contributions to good practices by academia

The International Council for Research and Innovation in Building and Construction has also made significant contributions to knowledge about construction safety and health worldwide. This organization conducts research and organizes seminars contributing to the sharing of best practices. The safety and health in construction work group meets at least twice per year to discuss the theme and related practices.¹⁶

Ways forward

OSH has improved in some countries in recent years due to joint efforts by governments and employers' and workers' organizations. However, ensuring safety on construction sites remains a major challenge. A decisive improvement requires good legislation supported by effective enforcement and inspection, with the active participation of workers, employers and clients. In order to move forward, more responsible client behaviour is needed so that safety and health becomes the professional responsibility of every stakeholder.

A wide range of tools have been used by governments and employers' and workers' organizations to establish a safety and health culture on construction sites. These include certification, such as the Australian AS/NZS 4801:2001 occupational safety and health management system, and accreditation systems such as the OHSAS 18000 standard in the United Kingdom and the Z1000 OSH management standard in Canada. The National Occupational Safety Association grading system in South Africa provides safety and health auditing. Registration schemes, such as the Considerate Constructors Scheme in the United Kingdom, have sites registered, monitored and assessed through a five part Code of Considerate Practice.

Another practice is the inclusion of OSH in skills assessment schemes, such as the Construction Skills Health and Safety Test in the United Kingdom, replaced in 2012 by the

¹⁵ BWI: *Building Women Power through Trade Unions*, op. cit.

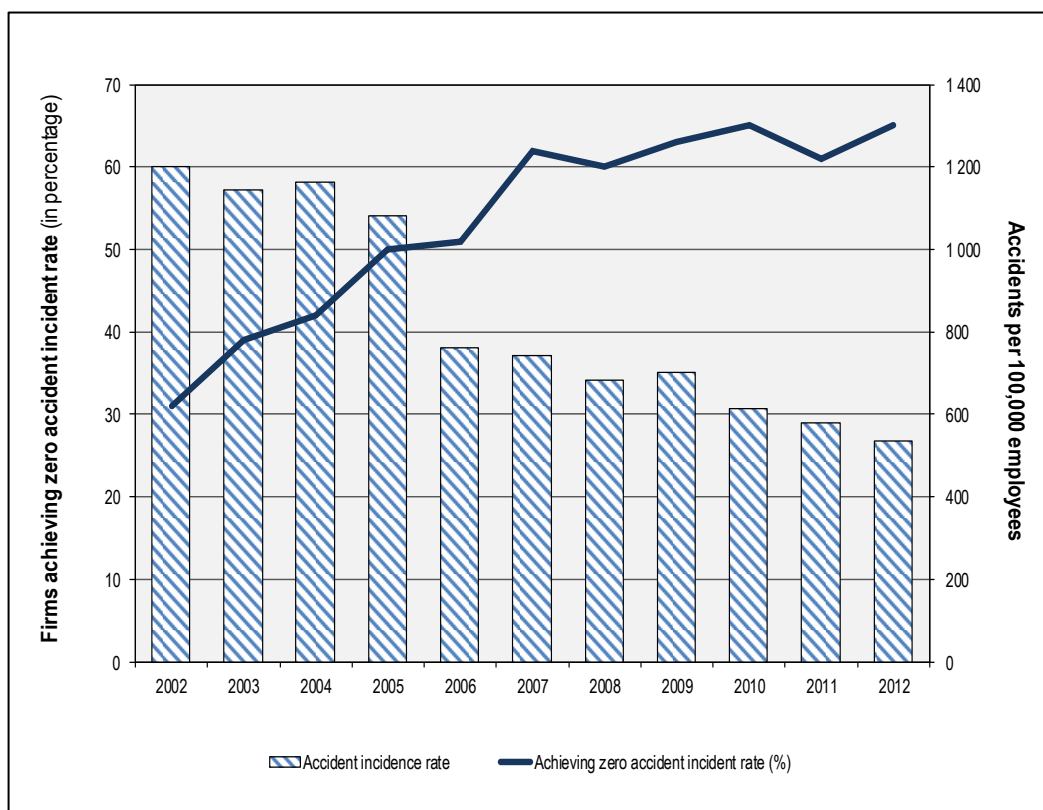
¹⁶ www.cibworld.nl/.

Health, Safety and Environment Test, which ensures that every worker who passes the test has a minimum knowledge of safety and health awareness. The test goes towards qualifying for the United Kingdom major card schemes, such as the Construction Skills Certification Scheme. Although voluntary, it serves as an important work selection requirement.

A further valuable tool is the setting of targets and benchmarking. The United Kingdom Government, for instance, publishes annual key performance indicators, which include reports on accidents, and zero accident rates. These have had an important impact on safety and health awareness and have contributed to the benchmarking of companies. The percentage of contractors reporting no accidents rose from 30 per cent in 2002 to 60 per cent in 2007, with similar figures being maintained in recent years. Furthermore, the industry accident rate fell to 536 per 100,000 workers in 2010–11, a 7 per cent reduction compared to the previous year (see figure 3.2).¹⁷

Ways to combine workplace safety and environmental protection could also be explored. So far, green construction sites still face similar OSH challenges to traditional sites.^{18, 19}

Figure 3.2. United Kingdom construction accident rates, 2002–12



Note: Health and Safety Executive accident incidence rate data is for the preceding financial year (for example 2012 results are for 2010–11). Source: Glenigan: *UK Industry Performance Report 2012: Based on the UK Construction Industry Key Performance Indicators*.

¹⁷ Glenigan: *UK Industry Performance Report 2012: Based on the UK Construction Industry Key Performance Indicators*.

¹⁸ ILO: *Promoting safety and health in a green economy*, 2012.

¹⁹ R. O'Neill: "Greenwash", in *Hazards Magazine*, Issue 108, Oct.–Dec. 2009, at www.hazards.org.

Safety and health agencies, which can be public or private, also promote good practices through regulation, inspection and enforcement (in the case of the public ones), along with promotion, awareness raising, information and advice. Some of the most noticeable agencies are the European Agency for Safety and Health at Work, the Health and Safety Executive in the United Kingdom, the Occupational Safety and Health Administration in the United States, the Australian Safety and Compensation Council, Site Safe in New Zealand, the Japan International Centre for Occupational Safety and Health, and Brazil's FUNDACENTRO. A number of these have published best practice guidelines to improve OSH.

The participation of workers and the existence of an OSH management team on site are important elements for improving conditions. In recent years there has been an overall decline in arrangements for representation and the consultation of worker representatives, especially in advanced economies.²⁰ However, two examples of such initiatives that have been effective in improving OSH on construction sites are: (i) the work of itinerant representatives, in countries such as Italy, Norway and Sweden (regional or territorial representatives); and (ii) agreements between employers and unions, which allow worker representatives to access workers employed by other contractors on the same sites.

In conclusion, stakeholders in the industry should work together and in cooperation with inspectors to enhance safe and healthy environments. They can do this by:

- promoting workplace compliance;
- improving knowledge of the OSH situation in construction through the publication and updating of information and statistics;
- ensuring that vocational education and training addresses construction OSH and related issues; and
- facilitating a developmental approach to support small and emerging contractors.

Methods used to improve OSH in construction in the preparations for the 2014 Football World Cup could be used elsewhere as examples of good practice, for instance to address existing challenges^{21, 22, 23} and improve OSH conditions in the preparations for the 2022 Football World Cup to be held in Qatar.

²⁰ D. Walters: *The role of worker representation and consultation in managing health and safety in the construction industry*, Working Paper 270, ILO, 2010.

²¹ United Nations: *Report of the Special Rapporteur on the human rights of migrants, François Crépeau: Addendum: Mission to Qatar*, United Nations General Assembly document A/HRC/26/35/Add.1, 21 Apr. 2014.

²² Amnesty International: *Qatar: No Extra Time: How Qatar is still failing on workers' rights ahead of the World Cup*, 12 Nov. 2014.

²³ Amnesty International: *Promising little, delivering less: Qatar and Migrant Labor Abuse Ahead of the 2022 Football World Cup*, 20 May 2015.

4. The role of corporate social responsibility in promoting decent work

By exercising corporate social responsibility (CSR) and other voluntary initiatives, construction companies demonstrate ways to move beyond existing legislation and respond to unmet social and environmental needs. This is particularly important in countries that have a poor legislative framework or where legislation is not properly enforced. At the same time, CSR is not a substitute for legislation and enforcement.

The Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy and the ILO Declaration on Fundamental Principles and Rights at Work are the main ILO instruments providing guidance to companies on social policy and responsible labour practices.

This chapter will consider various initiatives that support CSR in the construction industry, including initiatives from international institutions, governments, and employers' and workers' organizations.

Global initiatives encouraging the contribution of business to social development

The UN Global Compact initiative

The UN Global Compact was launched in 2000 and provides a framework to promote responsible corporate citizenship and enable business to be part of the solution to the challenges of globalization. Businesses of all kinds commit to the ten principles in the areas of human rights, labour, the environment and anti-corruption. The principles relating to labour are shown in box 4.1.

Box 4.1

Labour principles contained in the UN Global Compact

Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;

Principle 4: The elimination of all forms of forced and compulsory labour;

Principle 5: The effective abolition of child labour; and

Principle 6: The elimination of discrimination in respect of employment and occupation.

Source: The ten principles of the UN Global Compact, 2000.

In 2013, the UN Global Compact initiative published a report that sets the Global Compact's agenda for the following years.¹ Objectives include identifying key challenges and opportunities, engaging with all stakeholders, collecting existing best practices and scaling up sustainability initiatives. One result of this work is the development of the *Best practice toolkit for the land, real estate and construction sectors*. Published in the summer of 2015, this is the first initiative to address corporate sustainability and improve business

¹ UN Global Compact: *Architects of a Better World: Building the Post-2015 Business Engagement Architecture*, 2013.

practices in a specific sector of the UN Global Compact.² The ILO participated in the elaboration of the labour-related components of the toolkit, which includes references to child labour, freedom of association, collective bargaining, OSH, minimum wages, migrant workers, working hours and non-discrimination.

The Global Reporting Initiative

The Global Reporting Initiative (GRI) is another example of a worldwide initiative that promotes ethics and good labour practices. Launched in 1997, the initiative works as a network-based organization, with a widely used sustainability reporting framework, with targets for labour practices and decent work. Box 4.2 shows various labour aspects to be assessed by companies in GRI reporting.

<p>Box 4.2 Labour aspects included in the Global Reporting Initiative</p> <ul style="list-style-type: none">■ Embedding diversity into a company's culture, creating a more flexible working environment and increasing the diversity mix of the workforce.■ Equal employment opportunities, including labour/management relations.■ Health and safety education – minimizing the risk of accidents through education programmes in order for employees and subcontractors to act responsibly.■ Training and education of employees, including green training.■ Balance of male and female employees and of females in managerial roles.■ Employee retention, measured by years of continuous service.■ Employee volunteering.■ Skills for the young. <p>Source: GRI: <i>A snapshot of sustainability reporting in the construction and real estate sector</i>, GRI Research and Development Series, 2008.</p>

Construction companies have participated in this initiative, not only by preparing and disseminating reports using GRI guidelines, but also as key supporters. Examples of such construction companies include Bopro (Belgium), Construction Products Holding Company (Saudi Arabia), Even (Brazil), Maga Engineering (Pvt) Ltd (Sri Lanka) and Rider Levett Bucknall UK Ltd (United Kingdom). They play an important governance role and provide funding for GRI activities.³

In 2008, the GRI published a review of sustainability reports from 16 companies in the sector, including Skanska (Sweden), Group Five (South Africa), Obayashi (Japan), Hochtief (Germany), Cemex (Mexico) and Holcim Ltd (Switzerland).⁴ Of the 16 companies surveyed, most reported on diversity in the company's culture and community involvement. Most companies reported using indicators relating to equal employment opportunities, health and safety, fatal accident rates, and percentage

² <http://business.un.org/en/documents/11228>.

³ <https://www.globalreporting.org/Pages/GRIOrganizationsSearchPage.aspx>.

⁴ Global Reporting Initiative: *A snapshot of sustainability reporting in the construction and real estate sector*, GRI Research and Development Series, 2008.

comparison of male and female employees. Issues rarely reported included youth skills, specific training on asbestos, the number of unemployed trained people, training as a percentage of payroll, training days per employee, the percentage of women in management and absentee rates.

In September 2011, the GRI released the *Construction and real estate sector supplement*, which provides specialized guidance to meet the unique needs of the sector.⁵ Like the GRI guidelines, sector supplements are produced by multi-stakeholder working groups from both developed and developing countries using a consensus-seeking approach. The supplement includes additional aspects related to compliance with health and safety management systems.

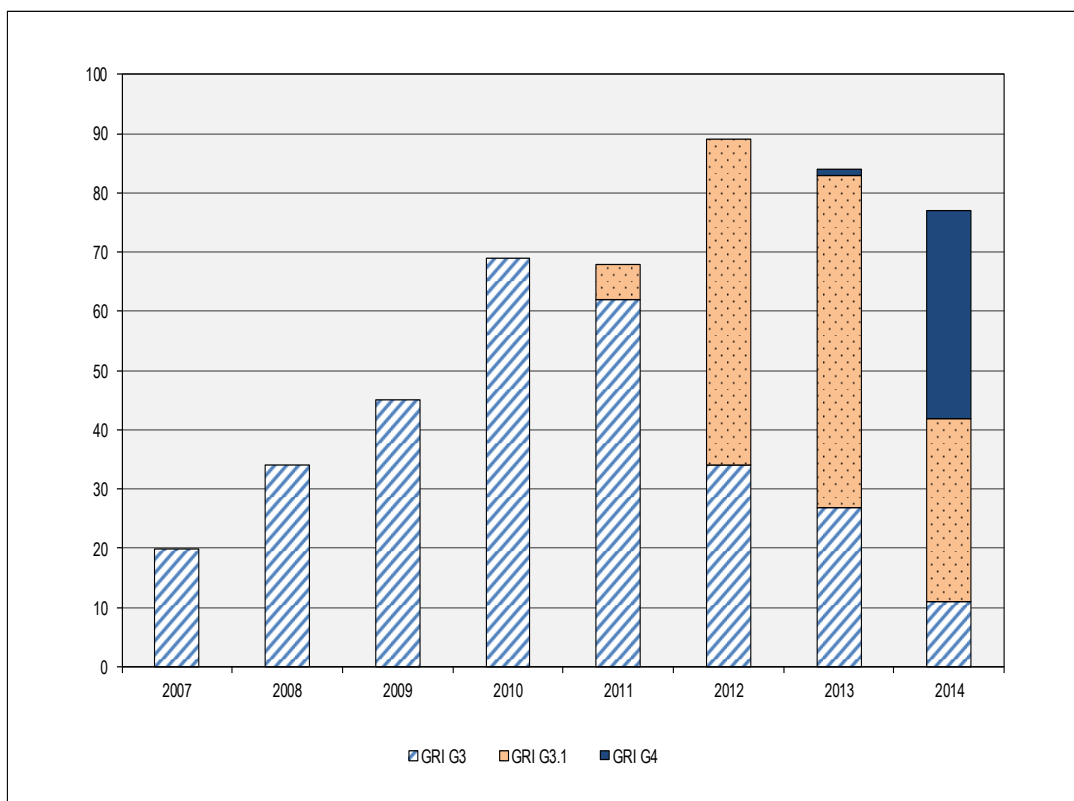
In 2013, the GRI published the G4 guidelines.⁶ These capture the most recent developments in sustainability reporting, including aspects of the process followed to report, the involvement of high-level management, commitments and follow-up mechanisms. Furthermore, the new guidelines refer to sustainability along supply chains as well as to mitigation and compensation mechanisms.

Figure 4.1 shows the use of GRI reporting in recent years. In 2014, up to 77 construction and real estate companies used the various versions of the guidelines. The biggest increase in sustainability reporting took place in 2012, as a result of the publication and dissemination of the *Construction and real estate sector supplement*. Although the reporting rate subsequently declined, the underlying trend is still positive. The publication of sustainability reports on construction is most common in Australia, Japan and some European countries.

⁵ <https://www.globalreporting.org/resource/library/GRI-G4-Construction-and-Real-Estate-Sector-Disclosures.pdf>.

⁶ <https://www.globalreporting.org/reporting/sector-guidance/sectorguidanceG4/Pages/default.aspx>.

Figure 4.1. Construction company reporting under the GRI, by year and by guidelines version



Source: Calculations based on the GRI's Sustainability Disclosure database.

OECD Guidelines for multinational enterprises

The 2011 OECD *Guidelines for Multinational Enterprises* are a set of recommendations on responsible business conduct. They are directed at governments, explaining what is expected of multinational enterprises operating in or from OECD member States and other signatory countries.⁷ Governments adhering to the Guidelines encourage the enterprises from their respective countries to observe the document wherever companies operate, taking into account the particular circumstances of each country. The Guidelines provide standards of good practice consistent with international labour standards, including respect for freedom of association and collective bargaining, tackling child labour, ending forced labour, not discriminating among employees, and promoting consultation and cooperation between employers and workers and their representatives. While not specific to construction, the Guidelines can also be used by the sector.

In 2014, the Trade Union Advisory Committee to the OECD (TUAC) submitted a report calling for government action to address the violations of the OECD Guidelines in Qatar.⁸ The report noted that multinational enterprises should develop plans to ensure that:

⁷ OECD: *Guidelines for Multinational Enterprises*, OECD Publishing, 2011.

⁸ TUAC: *Qatar: Implementing the OECD Guidelines for Multinational Enterprises*, 2014. http://www.tuac.org/en/public/e-docs/00/00/0E/D6/document_doc.phtml.

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- workers are in possession of their passports at all times;
 - workers are provided with the terms and conditions of employment offered at the moment they accepted employment in Qatar;
 - workers are paid the same wage rate per job;
 - recruitment fees paid by the worker are reimbursed;
 - workers receive expeditiously a “No Objection Certificate” (NOC) letter and/or exit visa if they want to change employer or leave the country;
 - workers have a right to form a representative workers’ organization;
 - worker accommodation is compliant with national and international standards.

Governing safety in the construction industry – The case of the Netherlands

Governments can also play a role in supporting private-sector engagement in voluntary initiatives that promote corporate sustainability. An example of a recent CSR initiative proposed at national level is the *Safety in Construction Governance Code*.⁹ The Code was negotiated by the Netherlands Government Buildings Agency, the Netherlands company in charge of maintenance of rail infrastructure (ProRail) and the Netherlands Directorate-General for Public Works and Water Management. It was signed in January 2014 by 15 Netherlands construction enterprises, including Heijmans, VolkerWessels and the Royal BAM Group. The aim of the Code is to reduce safety risks and health hazards and to improve the safety culture through collective efforts by the industry. The Code also includes a commitment to strengthen the supply chain and promote standardization, education and knowledge exchange. Companies will publish their efforts to improve health and safety through annual sustainability reports.

Employers–workers agreements

International framework agreements

International framework agreements (IFA) – also known as global framework agreements (GFA) – are tools negotiated between multinational enterprises and the relevant global union federation. Their aim is to establish continuous communication between the parties and ensure that enterprises provide the same labour standards in all the countries in which they operate.¹⁰ IFAs are not strictly a CSR initiative because they result from negotiations between companies and international worker representatives. However, they constitute voluntary commitments to respect specific employment and labour conditions.

⁹ <http://www.heijmans.nl/en/news/safety-construction-governance-code/>.

¹⁰ http://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_080723/lang--en/index.htm.

The content of IFAs negotiated by companies and trade unions varies, but they all refer to ILO core Conventions and the four fundamental principles and rights at work, as well as to other ILO standards, such as those related to the protection of worker representatives, wages, OSH, and skills training. Table 4.1 contains a list of GFAs with multinational construction enterprises, indicating the year the agreement was signed.

Table 4.1. Global Framework Agreements signed by multinational companies with Building and Wood Workers' International

Company	Country	Year
Hochtief/ACS	Germany/Spain	2000
Skanska AB	Sweden	2001
Ballast Nedam	Netherlands	2002
Veidekke	Norway	2005
Royal BAM	Netherlands	2006
Impregilo	Italy	2006
VolkerWessels	Netherlands	2007
Italcementi	Italy	2008
Pfeiderer	Germany	2010
OHL	Spain	2012
Ferrovial	Spain	2012
FCC	Spain	2012
Lafarge	France	2013
Salini Impregilo	Italy	2014
GDF Suez	France	2014
Salini	Italy	2014
Acciona	Spain	2014
Dragados	Spain	2014
Sacyr	Spain	2014

Source: Author compilation from information on the BWI website.

In 2013, Arbeit und Leben, PASOC and IG Metall published *International framework agreements (IFA) in practice*, a guide that provides practical information on implementing and monitoring IFAs for worker representatives in multinational companies.¹¹

The expansion of IFAs and other forms of business–trade union cooperation demonstrates that businesses in the industry are increasingly leveraging the knowledge, expertise and resources of trade unions to support better working conditions.

¹¹ <http://www.bwint.org/default.asp?index=4925&Language=EN>.

Employers' initiatives

A sustainable development charter for European industry

The European Network of Construction Companies for Research and Development is an example of an initiative among businesses in the European market. Collective action initiatives such as this one are sometimes the only option for levelling the playing field in terms of standards and implementing important changes, especially in cases where there are trade-offs between short-term economic profits and long-term sustainable development. The network comprises 20 European construction companies with 1.15 million employees. In 2014, the network adopted a Sustainable Development Charter, which establishes commitments in terms of providing employees with a healthy working environment, setting ethical standards in dealing with employees and the community at large, setting ethical business standards, and promoting initiatives with local communities and stakeholder engagement.

Codes of ethics of employers' organizations

In 2011, the Inter-American Federation of the Construction Industry (FIIC) developed an ethical code that construction federations of the region can use to develop their own codes.¹² There are examples of ethical codes even earlier than the one published by the FIIC in 2011. For instance, in 2009, El Salvador¹³ published a guide on responsible entrepreneurial practices, while Nicaragua¹⁴ published one in 2006.

In 2012, the Chilean Construction Chamber (CChC) developed the *Code of Good Practices in the Construction Industry*.¹⁵ The Code defines ethical performance standards and works as a self-regulatory tool. Commitments include maintaining stable and fair working conditions, providing workers with safe equipment and materials, and respect for the political and religious views of workers. Compliance is required by all member construction companies during all phases of the construction cycle and is monitored by an ethics commission. In the first phase, the Code regulates relations among CChC members, and at a later stage third parties can claim any breach of the rules contained in the Code. Other South American ethical codes have been published by employers' organizations in the construction sphere in Ecuador¹⁶ and Uruguay.¹⁷

In 2010, the China International Contractors Association published a Guide on Social Responsibility for its members. Since then, this voluntary guide has been used by construction companies to establish relationships with trade unions in a number of

¹² <http://www.fiic.la/Codigo%20de%20Etica%20FIIC.pdf>.

¹³ http://www.casalco.org.sv/archivos/Codigo_de_Etica_CASALCO_C.pdf.

¹⁴ <http://www.trade.gov/goodgovernance/adobe/Guia%20de%20Etica%20de%20Nicaragua%202da%20edicion.pdf>.

¹⁵ <http://www.cchc.cl/index.php/nosotros/que-es-cchc/codigo-de-buenas-practicas>.

¹⁶ <http://www.camicon.ec/index.php/conocenos/administrativo/codigo-de-etica>.

¹⁷ <http://deres.org.uy/wp-content/uploads/Manual-de-Etica-DERES.pdf>.

countries, including Ghana, Kenya, Namibia, Nigeria and Uganda. The guide refers to issues such as employment relationships, OSH, communication and negotiation between workers and management, and the establishment of the prevailing wage rates.¹⁸

¹⁸ China International Contractors Association: *Guide on Social Responsibility for Chinese International Contractors*, 2010.

Conclusion

This paper has shown that global construction output has recovered from the global economic crisis and is expected to increase in the coming years, due to increased urbanization, a housing backlog, infrastructure renewal, and the rising demand for water and energy. This will generate employment.

While some countries, especially in Europe, may not experience growth in new construction, there is significant demand for the repair and maintenance of built fabric, which also generates jobs. The growing trend towards green construction may further increase employment opportunities, as it entails significant changes in the existing urban fabric, with considerable prospects for retrofitting. Green construction will also be instrumental in counteracting the potential decline of construction resulting from the decline in oil prices.

The scenario for employment creation should take account of technological trends, which affect work and employment practices. In addition to green construction, examples of such trends include off-site construction and nanotechnology.

The paper has identified ways to improve skills training and occupational and health practices, showcasing good practices by governments, employers, workers and other actors. It has also identified various CSR practices which, while not being a substitute for regulation, also contribute to improving working conditions in the industry.

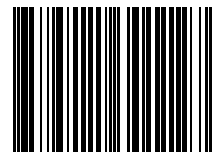
In sum, the paper has identified how, and where, the industry will grow in the coming years, and in relation to which subsectors, and it has addressed key technical trends. This provides a basis for the discussion of labour and employment issues. The use of good practices, regarding skills, OSH and CSR, constituting examples that could be adapted as necessary and used elsewhere, could also be discussed. Ways of combining different individual practices to create an integrated approach is a further subject for discussion.

Social dialogue can be a vital means of incorporating all the above elements into a single discussion, contributing to recommendations that take the interests of all parties into consideration.



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