
INTERNATIONAL LABOUR ORGANIZATION

**The construction industry in the twenty-
first century: Its image, employment
prospects and skill requirements**

**Tripartite Meeting on the Construction Industry
in the Twenty-first Century: Its Image, Employment
Prospects and Skill Requirements**

Geneva, 2001



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Introduction

Odera is a young Kenyan from Nairobi who completed secondary schooling in 1985. After “tarmacking” for eight years (local word for walking up and down the tarmac road looking for a job) his family prevailed on him to join his uncle who was a plumber. Odera learned on the job and became an accomplished plumber, but he feels that his job is unrewarding in terms of pay and recognition, as exemplified by the fact that he lives in a one-room shack in the Nairobi slums. Odera does not miss a chance to remind his family and friends to work hard in their studies so that they do not end up like him.

Njeri Wachira, 2001.

The context

As we enter the twenty-first century, few would dispute that the construction industry has a poor image.

Scenes of devastation as buildings collapse following earth tremors, due to poor construction and inadequate inspection, are only too familiar on our television screens. Reports of large-scale corruption involving contractors and governments are also commonplace. On a smaller scale, there are few householders who have not had some bad experience at the hands of “cowboy” builders, who operate around the periphery of the industry and generate considerable criticism of the sector as a whole. All of these problems contribute to the poor image of the industry in the eyes of its clients and the public at large.

But the industry also has a poor image in the eyes of its workforce, or potential workforce, and it is this aspect that is of most concern in this report. The poor image of work in the construction industry is generally thought to stem from the nature of the work, which is often described as “dirty, difficult and dangerous”. But the real reason why construction work is so poorly regarded has much more to do with the terms on which labour is recruited than the nature of the work itself. For many construction workers around the world the terms of employment have always been poor. But many others have seen a significant deterioration in the past 30 years, as the construction industry has led the way in the adoption of “flexible” labour practices.

The “outsourcing” of labour through subcontractors and other intermediaries is now the norm in most countries. This means that work in construction has become increasingly temporary and insecure, and workers’ protection (where it existed) has been eroded as

large numbers are excluded from social security schemes. The increase in the practice of employing labour through subcontractors has also had a profound effect upon occupational safety and health and it has undermined collective bargaining agreements and training provision. The level of skill in the construction industry in some countries has fallen significantly as a result.

The image of the construction industry has suffered from these developments, not least in the eyes of its potential workforce. In much of the world, work in construction is not regarded as “decent work”. Lack of opportunities for training and skill formation contribute to the unattractiveness of a career in construction. Attracting new entrants is a major problem in countries where workers have alternatives (mainly, but not entirely, the richer ones). In both developed and developing countries difficulties are experienced in recruiting young, educated workers, as the quote at the beginning of the report makes clear.

The inability of the industry to attract workers and invest in training them has serious repercussions for the productivity and quality of construction products and hence for the ability of contractors to satisfy their clients’ needs. It is therefore of concern to both employers and workers. Labour shortages and lack of skills can also create pressures to replace labour by machines, through prefabrication and mechanization, thereby threatening the long-term potential of the construction industry to generate much needed employment. Hence there are linkages between the three issues of image, employment and skills. The report will focus on these linkages.¹

Background to the Meeting

The Meeting is part of the ILO’s Sectoral Activities Programme, the purpose of which is to facilitate the exchange of information among constituents on labour and social developments related to particular economic sectors, complemented by practically oriented research on topical sectoral issues. This objective has traditionally been pursued by the holding of international tripartite sectoral meetings for the exchange of ideas and experience with a view to fostering a broader understanding of sector-specific issues and problems, promoting an international tripartite consensus on sectoral concerns and providing guidance for national and international policies and measures to deal with the related issues and problems, promoting the harmonization of all ILO activities of a sectoral character and acting as a focal point between the Office and its constituents, and providing technical advice, practical assistance and concrete support to ILO constituents in their efforts to overcome problems.

The Meeting was included in the programme of sectoral meetings for 2000-01 at the 273rd Session (November 1998) of the Governing Body. In the light of the different features of the construction industry according to the level of industrialization, it was decided that a larger than average tripartite meeting would be convened to include participants from industrialized, newly industrializing and developing countries. Governments of the following 23 countries were invited to send representatives: Austria, Brazil, Cameroon, Canada, China, Egypt, Germany, India, Italy, Japan, Kenya, Malaysia, Mexico, Panama, Philippines, Poland, South Africa, Spain, Sweden, Switzerland, Turkey, United Arab Emirates, United States. In the event of any of these governments being unable to attend, regional substitutes were to be drawn from a reserve list of countries. In

¹ Employment was discussed at a tripartite meeting in 1986 and training and skills in 1992. The report will therefore focus on the linkages between the three issues, rather than dealing with each separately.

addition, 23 Employers' and 23 Workers' representatives were to be chosen after consultation with their respective groups in the Governing Body.

The purpose of the Meeting, as decided by the Governing Body, is to exchange views on the construction industry in the twenty-first century, its image, employment prospects and skill requirements, using a report prepared by the Office as the basis for its discussions; to adopt conclusions that include proposals for action by governments, by employers' and workers' organizations at the national level and by the ILO; and to adopt a report on its discussions. The Meeting may also adopt resolutions.

Outline of the report

The main theme of the report is changing employment relationships and industrial structures in the construction industry and the impact of these changes on the quality of employment in the industry. Chapter 1 sets the scene by examining the distribution of construction employment worldwide at the turn of the century and the characteristics of the construction workforce. Chapter 2 focuses on the employment relationship in construction, documenting and explaining the changes that have taken place in the past 30 years, and their impact upon the structure of the industry. It is shown that there has been a big shift to indirect employment as contractors outsource their labour requirements. This has been accompanied by a significant increase in the proportion of the workforce employed in small or very small firms. The implications of these changes upon collective bargaining, social security, safety and health, training and skill formation, are examined in Chapter 3. It is concluded that the trend towards labour contracting is unlikely to be dramatically reversed. The issues raised in the final chapter therefore relate to meeting skill requirements and increasing the quality of employment in an increasingly casualized industry.

The coverage of the report is global. But an attempt is made, wherever possible, to draw on data and examples from those countries represented at the Meeting. Particular attention is paid to the less developed countries amongst them. There are a number of reasons for this. Firstly, as is shown in Chapter 1, at least three-quarters of the world's construction workers are in the less developed countries, where employment in construction is still increasing. Secondly, construction workers in the less developed countries are more exposed to accidents and endure much poorer terms and conditions of work than workers in the developed countries. They also have fewer opportunities to acquire the skills that the industry needs if it is to develop. The improvement of employment conditions and the development of institutions for the provision of appropriate training and skills certification in these countries must have a high priority in any global agenda for change.

One word of warning is in order here. It is a daunting task to write a general report about the construction industry worldwide. Whereas many other industries are becoming globalized, construction is still essentially a local industry, and construction labour markets are deeply embedded in local laws, regulations and institutions. It is not possible in a short report to respect the rich diversity of construction industries around the globe. While some common trends are detectable, and some degree of generalization inevitable, there will be many exceptions to the general trends which cannot always be listed.

The report has been prepared (and is published) under the authority of the International Labour Office and was written by Jill Wells, construction specialist in the Sectoral Activities Department. Parts of the report incorporate information from papers commissioned by the Office and prepared by: Rashid Abdul-Aziz, Priscilla Connolly, Steve van Huyssteen, Isabella Njeri Wachira, Carolina Pozzi de Castro, Joao Saboia,

Mariusz Sochacki, Lu You-Jie and Paul Fox and Albert Yuson. These papers have been edited and will be published singly, or in a consolidated form, as sectoral working papers. When published they may be obtained from the Sectoral Activities Department or from the ILO website (<http://www.ilo.org/sector>).

1. Construction output and employment: The global picture

1.1. Output and employment at the end of the twentieth century

Table 1 shows the global distribution of construction output and employment as we approached the end of the twentieth century. The data are based on output and employment figures for individual countries, which have been amalgamated by region and level of per capita income. High-income countries are defined as having GNP per capita above US\$9,266 in 1999, which is the criterion used in the *World Development Report* of 2000-01. Low-income countries are all those with per capita income below this level. Both sets of figures are only rough estimates, and this is particularly the case for developing countries. Furthermore, countries have only been included if estimates for both employment and output were available, which ruled out most countries in sub-Saharan Africa. The data therefore seriously underestimate construction activity in Africa.

Table 1.1. Global distribution of construction employment and output, 1998

| No. of countries | Region | Output (\$ m.) | | | Employment ('000s) | | |
|------------------|------------|-----------------------|----------------------|-----------|-----------------------|----------------------|---------|
| | | High-income countries | Low-income countries | Total | High-income countries | Low-income countries | Total |
| 9 | Africa | – | 20 962 | | – | 1 867 | |
| 23 | America | 723 569 | 243 247 | | 9 275 | 10 917 | |
| 22 | Asia | 665 556 | 387 831 | | 7 258 | 60 727 | |
| 2 | Oceania | 46 433 | – | | 685 | – | |
| 34 | Europe | 876 546 | 123 345 | | 11 820 | 8 978 | |
| 90 | Total | 2 312 104 | 701 755 | 3 013 859 | 29 038 | 82 489 | 111 527 |
| | % of total | 77 | 23 | | 26 | 74 | |

Sources:

1. Employment data is from the ILO *Yearbook of labour statistics*, 2000, except for India where local estimates of total employment have been used (Vaid, 1999). In the vast majority of cases the employment figure is total employment in construction. In those cases where total employment is not available, paid employment is taken as a proxy: this applies to the six countries of sub-Saharan Africa, Bahrain and France.

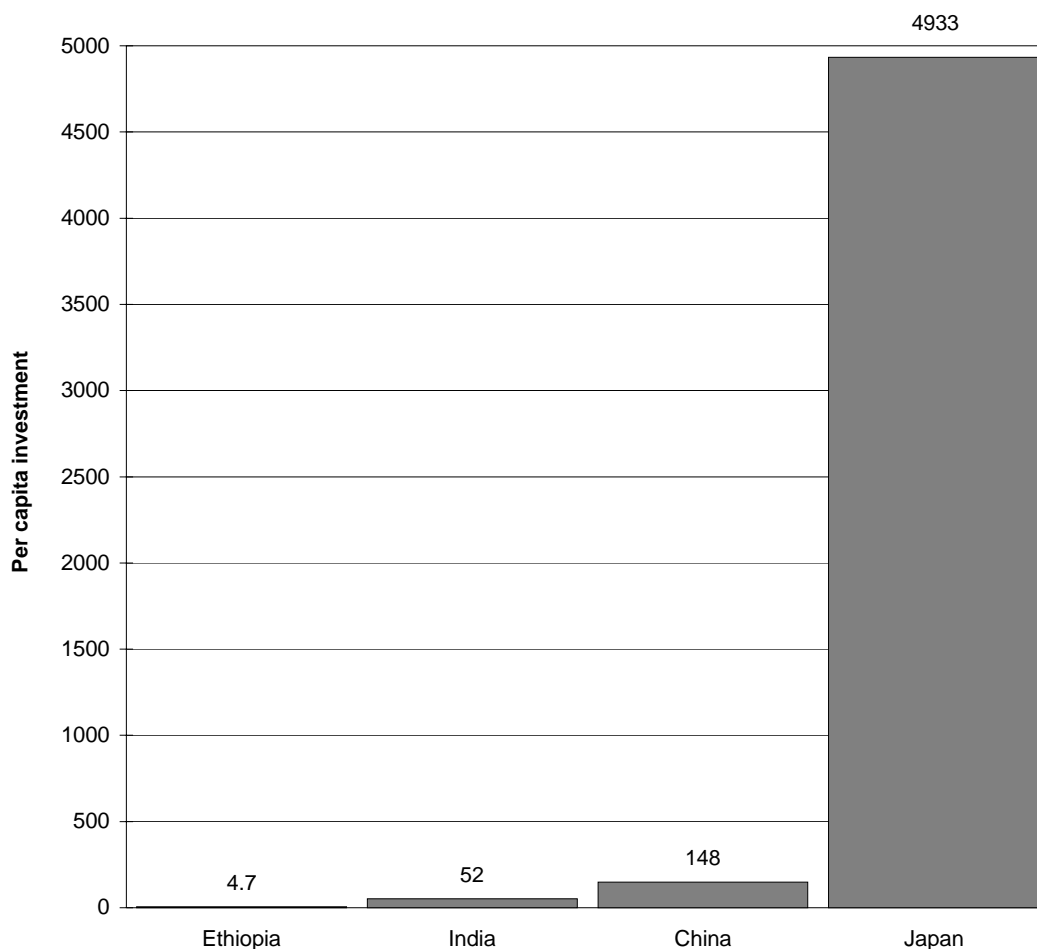
2. Output figures are taken from a special survey for the *Engineering News Record (ENR)*, 1998, which uses the best available national data for output, which is measured gross (the value of the completed construction project).

Output

It can be seen from the table that total construction output worldwide was estimated at just over \$3,000 billion in 1998. Output is heavily concentrated (77 per cent) in the high-income countries (Western Europe, North America, Japan and Australasia). The high-income countries of Europe alone are responsible for 30 per cent of total world output. The United States and Japan constitute the largest national construction markets with 22 and 21 per cent of total world output respectively. China, despite its huge size and rapid economic growth in recent years, lags a long way behind with only 6 per cent of total output; India has 1.7 per cent.

Using the output data from sources to table 1.1 and population data from the *World Development Report 2000/2001*, per capita investment in construction in a number of countries has been calculated and is shown in figure 1.1. It can be seen that in 1998 India invested the equivalent of \$52 per capita in construction, China invested \$148 per capita and Japan \$4,933. In Ethiopia per capita investment was less than 0.1 per cent of the Japanese figure, only \$4.7 per capita. This highly uneven distribution of construction output is, of course, a reflection of global inequality in income. Construction goods are expensive which means that they can be financed most easily by countries, or individuals, with large savings or the capacity to borrow.

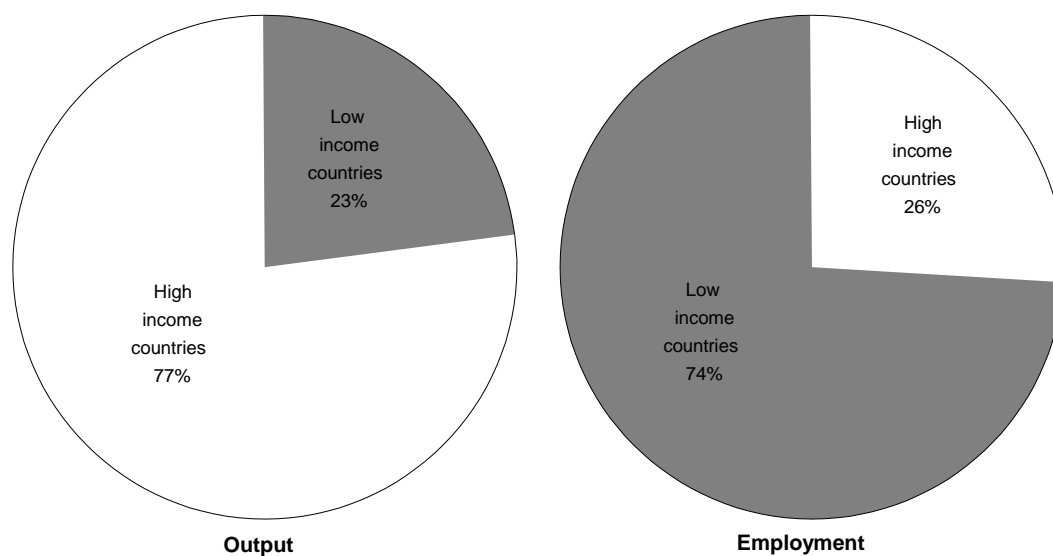
Figure 1.1. Per capita investment in construction in four countries, 1998 (US\$)



Employment

The data in table 1.1 tells a rather different story so far as employment is concerned. It can be seen that there were in excess of 111 million construction workers worldwide in 1998 and most of them were in the low- and middle-income countries. The distribution of construction employment is in fact almost the exact reverse of the distribution of output. The high-income countries produce 77 per cent of global construction output with 26 per cent of total employment. The rest of the world (comprising low- and middle-income countries) produces only 23 per cent of output but has 74 per cent of employment. This is illustrated in figure 1.2.

Figure 1.2. Distribution of construction output and employment, 1998



It can be inferred from the above that the “employment intensity” of construction activity is much higher in the low-income countries than in the high-income ones. Looked at the other way, the value of output per person employed is much lower. Average construction output per person employed was \$8,507 in the low-income countries in 1998, compared with \$79,623 in the high-income countries. The difference in part reflects the lower value of output in low-income countries (due to lower wages and material costs), but it is also a reflection of the pressure to use labour more sparingly in the richer countries where wages are high and labour costs are a large percentage of the tender price. This has generally been achieved by replacing labour with machines, through prefabrication and a greater use of plant and machinery in the production process.

The use of more capital-intensive methods of production makes sense in economic terms in high-income countries. But it has sometimes spilled over into the low-income countries, particularly on civil engineering projects. There are a number of reasons why this is so. The main factor is a considerable bias towards equipment-intensive methods on the part of the decision-makers on investments in developing countries. These include the clients, the lenders and the consultant engineers who provide the design and specification, which often determines the methods that have to be used in construction. This bias is often based on a misunderstanding of the cost effectiveness of labour-based methods and the perception that the product would be of lower quality. It is reinforced by national tendering systems that favour large-scale project planning and execution and hence capital-intensive methods.

In countries where wages are low and there is mass unemployment, the replacement of labour by machines does not make sense, from either an economic or a social perspective. In these countries all employment opportunities are welcome and the construction industry has no difficulty attracting labour. It could potentially create even more employment. The ILO has a long track record of technical cooperation with low-income countries which demonstrates the technical feasibility and economic viability of labour-based methods of infrastructure provision and which equips it to train people in their use. Ensuring these methods are widely adopted will help generate employment where it is badly needed.

The problem of the “premature” replacement of labour by machines in low-income countries does not exist to the same extent in building construction, which is in any case

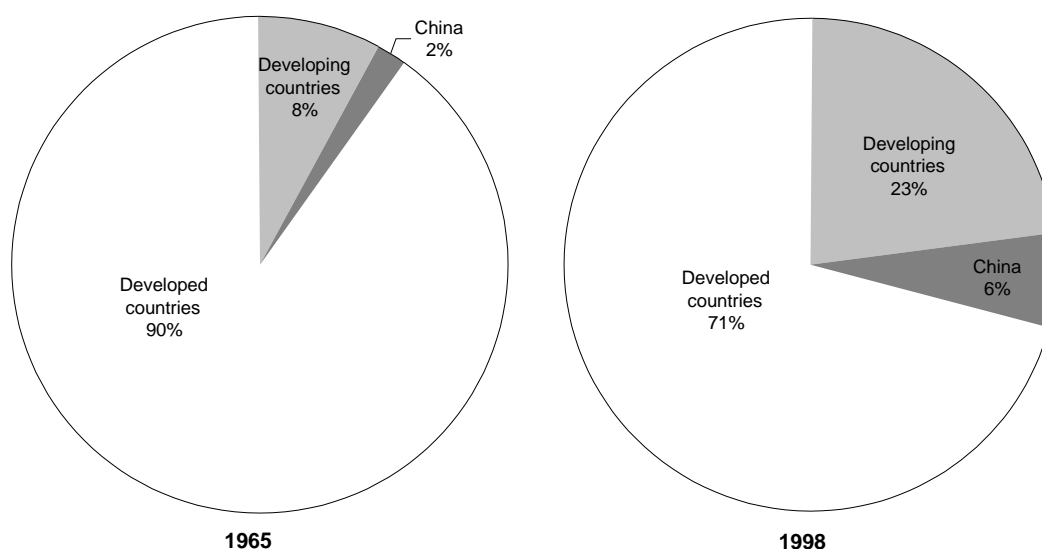
more labour-intensive than civil engineering. There is some evidence to indicate that one of the beneficial (and largely unsung) side effects of the introduction of structural adjustment policies in African countries in recent years has been a vast expansion of employment opportunities in the building sector, as labour is increasingly being substituted for capital following adjustments in relative prices (Wells and Wall, 2001).

1.2. Global trends in output and employment

Trends in output and employment are perhaps more interesting than distribution at any one point in time. While long-term, secular changes (which is what we are interested in here) are sometimes difficult to disentangle from short-run (cyclical) fluctuations, there is sufficient evidence to make some assessment of the way output and employment is changing on a global scale.

Estimates of global construction output (in this case net output or “value added”) in 1965 show that the developed countries (market and centrally planned) were responsible at that time for as much as 90 per cent of global output and the developing economies for just 10 per cent (BERU, 1972). But we have seen that by 1998 the developing countries had 23 per cent of output, more than doubling their share. In 1965, China accounted for just over 2 per cent of total global output, but by 1998 its share had grown to 6 per cent. These trends are illustrated in figure 1.3.

Figure 1.3. Distribution of construction output in 1965 and 1998



Developing countries

There is little doubt that a number of developing countries have seen a dramatic increase in both output and employment in the construction industry in the past 30 years. Construction is a major component of investment, hence expansion in construction activity is closely related to economic growth. Numerous studies have shown that construction output grows particularly fast, often exceeding the rate of growth of the economy as a whole, as countries put their basic infrastructure in place during the early stages of development (Strassmann, 1970; BERU, 1972; Edmonds and Miles, 1984; Wells, 1986; Bon and Crosthwaite, 2000).

Not surprisingly, the most dramatic and prolonged growth in construction output and employment in the past two to three decades has been in the newly industrializing countries (NICs) in Asia and Latin America.

The Republic of Korea provides a good example of the increase in construction employment during the process of industrialization. Employment in the construction industry rose from 192,000 in 1963 to 2,004,000 in 1997, before falling temporarily due to the economic crisis in 1998. The share of construction in total employment increased during the same period from 2.5 per cent to an incredible 9.5 per cent (Yoon and Kang, 2000).

In Malaysia, construction employment rose from 270,000 in 1980 to 746,000 in 1997, doubling its share of the workforce from 5.6 per cent to 10.7 per cent (Abdul-Aziz, 2001).

In Brazil, construction employment rose from 781,000 in 1960 to 4,743,000 in 1999, almost doubling its share of the workforce from 3.4 per cent to 6.6 per cent. Its share of GDP also doubled from 4.2 per cent to 8.5 per cent over the same period. (PNAD, various years).

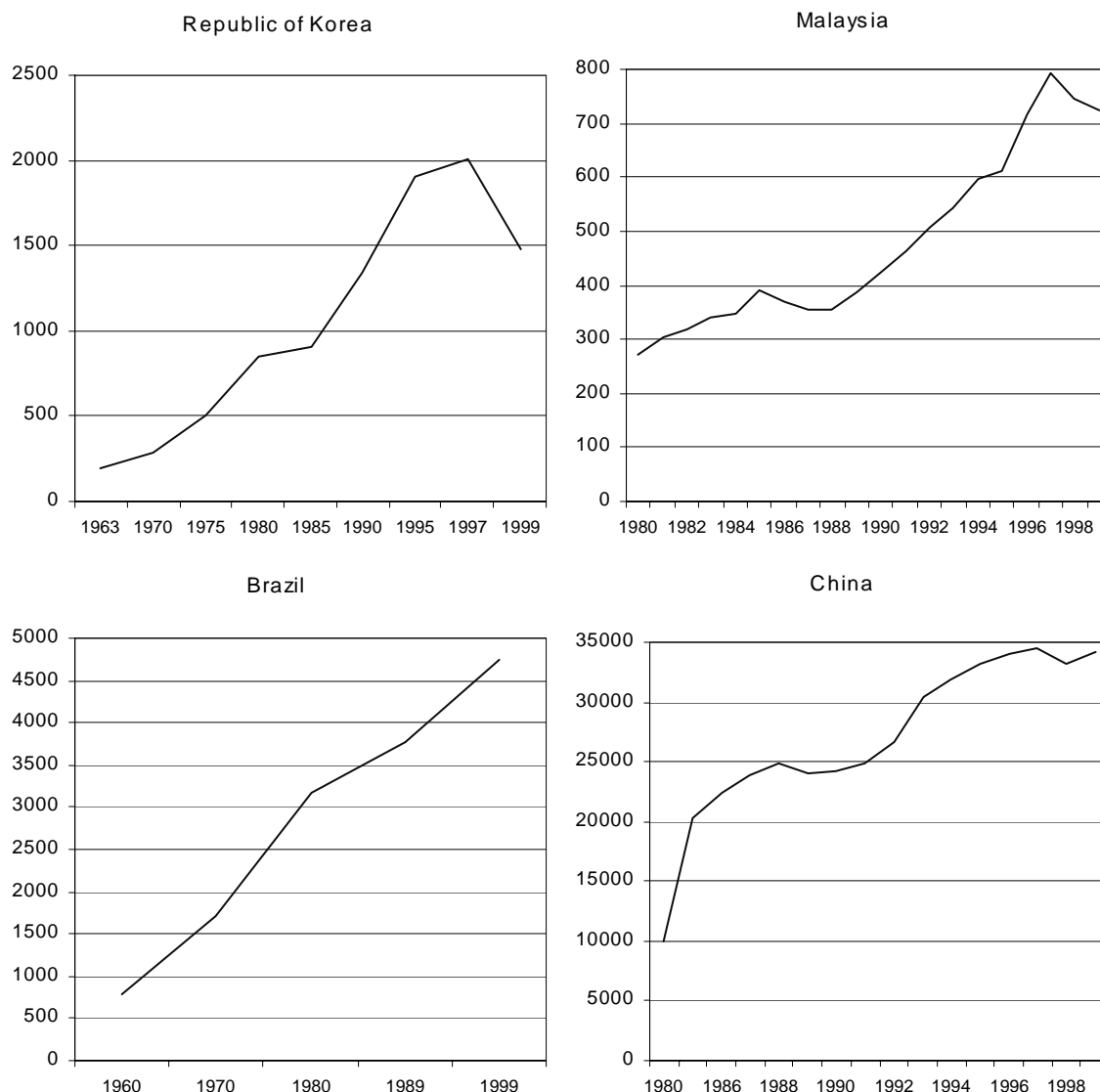
China has seen a very dramatic increase in employment in the construction industry in the past few decades. The construction workforce was just under 10 million in 1980 and grew to 30 million by 1993, more than doubling its share of the total workforce from 2.3 per cent to 5 per cent. (Lu and Fox, 2001).

These trends in construction employment are illustrated graphically in figure 1.4.

Construction employment is also now increasing rapidly (8.4 per cent per annum) in India. It was estimated at 14.6 million in 1995-96 and is predicted to more than double to 32.6 million by 2005-06. This means that 1.2 million workers are added to the construction workforce every year. The bulk of the increase is expected to be in the housing sector, which contributed almost 60 per cent of total construction employment in 1995-96 and is predicted to employ 20 million people by 2004-05. With the cost per job created in construction lower than any other sector of the economy, construction is seen as an “employment-spinning” sector (Vaid, 1999).

It is interesting to note that the poorer and less developed the country the greater may be the share of construction in total output and employment. In India it is estimated that around 16 per cent of the working population depends on construction activity for a livelihood (Vaid, 1999). In many other low-income countries (e.g. sub-Saharan Africa) data are not available to demonstrate the extent of dependence on the construction sector for work. But the evidence we have indicates that it may be substantial, even in the absence of any real economic growth (Wells and Wall, 2001). If/when the economies of these countries “take off”, the expansion of employment opportunities in construction will be very significant.

Figure 1.4. Recent trends in construction employment in selected NICs



Note: All graphs are 10³.

Developed countries

After rapid expansion in the early stage of economic growth, the rate of growth of construction output tends to slow down in mature economies (Strassmann, 1970; Bon and Crosthwaite, 2000). In many of the richer countries output, in real terms, has more or less stabilized.

Stable output combined with a trend towards mechanization/prefabrication has led in some rich countries to stagnant or declining employment in the construction industry. European countries with declining construction employment between 1970 and 1998 include Belgium, Denmark, Finland, France, Italy, Netherlands and Sweden.

However, in other high-income countries, employment is still expanding. In Austria, Germany, Ireland, Norway, Portugal, Spain and Turkey construction employment increased between 1970 and 1998, while in Switzerland it remained stable (UN/ECE, various dates). In some of these countries increasing employment reflects increasing output. But there is also a higher proportion of repair and maintenance activity in the

product mix in developed countries. Repair and maintenance is very labour-intensive and also very skill-intensive.

Outside Europe, construction employment has continued to increase in Australia, Canada, Japan and the United States. In these four countries together employment rose steadily from 10 million in 1971 to 16.5 million in 1998 (Wieczorec, 1995; ILO, 1999).

1.3. The role of construction employment and characteristics of the workforce

In the process of industrialization and urbanization, construction work provides a traditional point of entry into the labour market for migrant workers from the countryside. Construction is often the only significant alternative to farm labour for those who do not have any particular skill, and it has special importance for the landless.

Internal labour migration was very significant in Brazil during the process of rapid urbanization between 1960 and 1980, when an estimated 30 million people left the countryside for the urban areas. Surveys in São Paulo and Rio de Janeiro in 1985 found that migrants comprised 98 per cent and 94 per cent respectively of the construction workforce. A high proportion were from the north-east region, the poorest in the country (Grandi, 1985). While many migrants stayed in the cities, the proportion of migrants in the construction workforce declined, but it was still 43 per cent in 1996 (PNAD cited in de Souza, 2000).

A similar process is happening in India today, where unskilled work in the construction industry is one of the few job opportunities available to migrants to the towns from the less developed states. A survey of 670 workers on 11 construction sites in Delhi in 1999 found a majority of construction workers were first-generation migrants. The two major reasons given for migration were unemployment and poverty (Anand, 2000). Recruitment is through labour agents and is based on family, caste and village ties. It is not uncommon to identify worksites by the caste or the village or the language of those working there. Often the whole family, including children and the old, migrate to work in a kind of caravan that moves to the construction site (Vaid, 1999).

Also in China, the booming construction industry is drawing on surplus labour from the rural areas. Employment on construction sites in the towns is the only way for those displaced by increased agricultural productivity to gain some income. Pay is low but still many are able to save in a few years a sum of money sufficient to make an investment in agriculture. The urban construction companies depend on rural labour and government (central and local) promotes migration through the designation of certain provinces as "labour bases". Local government bodies also control the process through specially designated offices in the urban (receiving) and rural (sending) areas. In 1996 the construction industry in Beijing alone employed a total of 424,000 workers from 49 labour bases in seven different provinces. By 1999 the number had risen to 640,000 migrant workers coming from 60 labour bases (Lu and Fox, 2001).

Africa is now urbanizing very fast and here too construction is frequently the first job of migrants to the towns from the rural areas. Construction workers from the countryside are often recruited on a seasonal basis, returning at harvest time. In countries where men are traditionally involved in harvesting, women may make up a larger proportion of the construction workforce at times of peak demand for agricultural labour.

It is now mainly in developing countries that construction provides employment for rural-urban migrants. But within living memory the industry has also played this role in

developed countries, drawing on reservoirs of rural labour during the process of urbanization and agricultural intensification. When the pool of migrant workers from the rural areas dries up, the industry attracts and absorbs migrants from other countries with labour surplus and lower wages. For example, in Spain in the 1950s and 1960s the workforce came from the countryside. The construction industry was the first point of entry for migrants to the towns. Now it is one of the main paths of entry into the workforce for foreign workers, both legal and illegal. It plays an important social function within the Spanish labour market as a sphere of social change and integration (Byrne and van der Meer, 2000).

International migration for work in construction is particularly important in the countries of the Arabian Gulf, such as the United Arab Emirates, with small populations and big construction programmes financed by oil. Also in the past decade it has become a significant phenomenon in East Asia, where huge differentials in demographic characteristics and wages have led to a “siphoning” of migrant workers from low- to high-wage economies (ILO, 1995).¹

Construction is a job you can do without much schooling

Construction has the ability to “absorb the excluded” (de Souza, 2000). It provides employment for those with little education or skill, many of them from the poorer sections of society.

Recent surveys of construction workers in a number of Indian cities have revealed that they are predominantly young, from the lower castes and the Muslim community, and poorly educated (Vaid, 1999; Anand, 2000). A significant proportion is illiterate: 69 per cent of the workforce in Delhi, 56 per cent in Pune, 40 per cent in Mumbai and the entire workforce in Hyderabad and Visakhapatnam were found to have had no schooling (Vaid, 1999). In many of the larger cities the construction workforce is now locally born, but the majority is still from the most disadvantaged sections of society.

In Brazil also, workers in the construction industry have a lower educational level than workers generally. “The Brazilian construction industry does not even require an average level of education from its labour force.” (Zylberstajn, 1992, page 8.) In 1999, 14.6 per cent of the construction workforce was illiterate and 57 per cent had less than four years of schooling (PNAD, cited in de Souza, 2000).

The situation is very similar in China where 50 per cent of the 600,000 migrant workers on construction sites in Beijing have received no more than primary education and over 10 per cent are illiterate (Lu and Fox, 2001).

In developed countries also, the construction industry provides much needed employment opportunities for those in the community with few academic qualifications. It employs a disproportionate number of the least educated, offers vacancies to the long-term unemployed and those out of the labour force, as well as opportunities for second jobs (Dougherty, 1996).

¹ The issue of migrant labour in construction was discussed at a tripartite meeting in 1996 (see ILO, 1995). It will not therefore figure prominently in this report.

The role of women

In most countries, construction jobs are undertaken almost exclusively by men. However, in the countries of South Asia women play an important role which consists of performing unskilled tasks for low pay (Wells, 1990). For example, in India it is estimated that up to 30 per cent of the construction workforce are women. They are integrated into the building workforce at the bottom end of the industry, as unskilled workers or head-load carriers. Access to training is denied to them (Shah, 1996). Discrimination in pay is widespread. A survey of 2,600 construction workers in five cities found open inequality in pay with women earning 10-20 per cent less than men for similar work (Vaid, 1999). Moreover, women are often employed as part of a family work unit, as the piece-rate system encourages workers to engage their wives and children to increase output, and in these circumstances women may work but may not (directly) receive any payment at all. In the survey noted above, no female workers were on the payroll of any contractor, although they comprised from 23 per cent (Hyderabad, Delhi) to 34 per cent (Mumbai, Pune) of the construction workforce. Not surprisingly, no site had separate rest areas for females or nurseries for children and no women had received maternity benefit payments (Vaid, 1999).

Perhaps even more salutary than the current status of women in the construction industry is the attitude of skilled craftsmen towards them. Of the 670 workers interviewed on 11 sites in Delhi, 70 per cent of masons and 72 per cent of plumbers felt that women should not receive equal pay for equal work. The bias seemed to be more deeply embedded in the junior than in the senior craftsmen – which no doubt reflects a fear of potential competition for scarce positions (Anand, 2000). Even in Kerala, where many other basic labour rights are observed and there is a well-established construction workers' welfare board, a disparity in wages between men and women is socially accepted, indeed expected. It is also institutionalized in the "schedule of rates" for state-level engineering departments, with the result that efforts to enforce equality legislation have not yet yielded fruit (Jennings, 2001).

1.4. Construction in the eyes of the workforce

There is evidence from various parts of the world to indicate that construction workers do not view their employment in a very favourable light. Construction is regarded almost everywhere as a low status job.

In Malaysia, local youth would rather be unemployed than work in the construction industry. This is attributed to the archaic employment practices, outdoor work and prevalence of temporary and casual labour. The industry has been forced to rely on foreign labour, mostly from neighbouring Indonesia, for the past two decades. Official estimates put foreign labour at 80 per cent of the entire construction workforce in 1992 (Abdul-Aziz, 2001). There is consensus among employers in the industry that it will continue to depend on imported labour (regularized or otherwise) in the foreseeable future. As work in construction has come to be associated with immigrants (many of them illegal) its status has deteriorated further.

A similar situation is found in some developed countries where construction work has for many years been undertaken largely by immigrants, or by the children of immigrants (ILO, 1995). Also, recently the local population in many more countries has begun to shun construction work.

In Spain the industry is currently having difficulty recruiting new workers, especially better qualified young people, despite 12 per cent unemployment in the economy as a

whole. In the boom conditions that have existed since 1995 employers are looking to continued inflows of migrant workers from North Africa, Latin America and Eastern Europe (Byrne, 2000). Problems of recruitment among young, male workers (the traditional recruitment ground) in the United Kingdom are forcing a drive to recruit from alternative sections of the community – women and ethnic minorities (Bowen, 1996). In many other European countries the construction workforce is ageing and retirements are not being offset by new recruits (DG Enterprise, 2000).

The situation is similar in the United States, where the wage advantage that construction workers have traditionally enjoyed over other industries (and which was needed to keep them in the industry) has steadily eroded over the past 20 years, leading to a leakage of skilled workers from the industry and difficulty in replacing them (Philips, 2000). The pool of licensed tradespeople seems to be shrinking the most, with many homebuilders forced to hire people with no experience or training. While many sectors are affected by a tight labour market, in the construction sector there is a fear that this is not a short-term problem that will ease as the economy cools down. The problem is long term and will not be solved unless the industry can reach out to a new generation of potential workers. It is generally recognized that the industry needs to work on its image. Most people do not feel construction is a viable career (*Washington Post*, 2000). In the words of one union leader in Florida: “Everybody thinks that construction is the armpit of jobs (...) No parent wants their kid to be a construction worker” (*Wall Street Journal*, 2000).

In many other countries, both rich and poor, people work in construction out of necessity and not out of choice. Almost universally they wish for better things for their children.

A recent survey of 2,600 construction workers in five towns in India found that 90 per cent were working in construction because they had no choice, but they did not want their children to work in the industry (Vaid, 1999). Only 3.8 per cent of respondents in another survey in Delhi thought that construction was a suitable occupation for their sons (Anand, 2000). In China, construction work was ranked the lowest out of 69 occupations, in a poll of 2,600 young people in 63 cities carried out in 1999 by the Academy of Social Sciences (Lu and Fox, 2001). In Kenya the image of construction work is also very poor amongst the workers themselves. Those entering the industry do so as a last resort when all else has failed and they exit at the first opportunity, as the story of Odera at the beginning of the report makes very clear.

Of course it does not have to be this way. In some countries (for example, Denmark and Sweden) construction work is well paid and the workers are well protected. Work in construction can also be very rewarding. Writing as a construction worker in the United States, anthropologist Herbert Applebaum describes the positive factors giving satisfaction from construction work as: worker autonomy and control over work environment and output, loose supervision, non-bureaucratic organization of work, teamwork and companionship, belonging to a craft and occupational prestige. However, he admits that these positive factors have to be balanced against job insecurity, which is the biggest source of dissatisfaction for construction workers (Applebaum, 1999).

Unfortunately, job insecurity has increased in the United States and in many other countries in recent years. The next two chapters will examine the reasons for this and try to unravel why the construction industry is so poorly regarded as a place to work in so much of the world.

2. Recent changes in employment relationships and industrial structure

Subcontracting has always been important in the construction industry, particularly in building construction where the production process is divided into a number of discrete activities. These tasks or activities are often carried out sequentially and may require specialized labour. Hence, it often makes sense, in technical and economic terms, for general contractors to subcontract some tasks to independent, specialized units.

However, there is evidence from all parts of the world to indicate that subcontracting has increased significantly in the past two to three decades. And it is no longer restricted to specialized tasks. In some countries the bulk of the construction workforce is now recruited through subcontractors and other intermediaries as the “outsourcing” of labour requirements has become the norm.

This chapter maps these developments. It first examines the traditional practices of labour recruitment through subcontractors and intermediaries that is common in the construction industry in many developing countries. Evidence is then presented to demonstrate a further increase in labour subcontracting in developing countries and a very significant shift in this direction in the industrialized countries. The impact on the structure of the industry is examined. The final section explains these changes in terms of the nature of the construction process and in the context of globalization.

2.1. Employment relationships in construction in developing countries

In many developing countries, the practice of recruiting labour through subcontractors and intermediaries is long established. Subcontracting is usually on a “labour only” basis and may go through several stages on a large project, creating a multi-layer contracting system. At the bottom of the system are the intermediaries who recruit and control the labour. They are known as *mistris*, *jamadars* or *mukadams* in India, *oyaji* in the Republic of Korea, *kepala* in Malaysia, *gatos* in Brazil and *maestros* in Mexico. Although they go by different titles, their function is essentially the same. They constitute a bridge between labour seeking work and contractors and subcontractors who can offer work (Vaid, 1999).

In India, most contractors and subcontractors have *jamadars* or *mistris* more or less permanently attached to them. They are responsible for hiring labour, controlling and supervising the workers during the contract period, taking them away when the job is finished and bringing them back when there is a new job (Vaid, 1999). Recruitment of friends, neighbours and relatives is common and, as payment is by results, whole families are often involved. The loyalty of the labour is ensured through the payment of an advance (*peshgi*) from the contractor via the *jamadar*. The *peshgi* system provides the bond between the contractor, the intermediary and the worker. The intermediary is the guarantor of the contractor’s money and the worker’s employment, and a continuous link between the two. For this service he gets a monthly commission from the contractor and a cut from the wages of the worker.

A similar system of indirect employment, which allows contractors to cope with fluctuations in the demand for labour, has also been practised in Malaysia for many years (Abdul-Aziz, 1995). Workers are grouped into work gangs headed by a *kepala* or leader,

who is the link between the workers and subcontractors, and ultimately the main contractors. In Malaysia, most construction workers are migrants from Indonesia. Both workers and *kepala* were originally recruited directly by the subcontractors who also supervised the workers. However, many *kepala* now negotiate with employers (subcontractors) on the basis of work packages: they control the work process and pay their workers out of the proceeds. Hence they have become labour subcontractors in their own right.

In the Republic of Korea the labour intermediary is called an *oyaji*, meaning father. The *oyaji* is usually a skilled craftsman who operates as an independent manager-cum-worker. He receives a contract from a subcontracting company and does the construction work by employing daily workers. The subcontracting company may employ the *oyaji* on a monthly pay basis and control the work process itself. More usually, control is exercised through a contract, in which case the management is left to the *oyaji*. The subcontractor controls the *oyaji* because the latter is dependent on the former for future work (Yoon and Kang, 2000).

In the Philippines also, workers are commonly employed through subcontractors who negotiate the contract for labour on a project and then hire the workers through the foremen or gang leaders. For small projects it is the foremen who deal directly with the contractors. Often the foremen recruit their relatives or friends from their neighbourhood. There is no formal contract and the employer-employee relationship is also informal (Yuson, 2001).

The situation is similar in Egypt, where large construction firms use subcontractors and labour recruiters to gain access to a flexible workforce, rather than hire workers directly on legal contracts. An estimated 90 per cent of manual construction workers are either hired on a casual basis as wage workers or are self-employed. Construction workers' coffee houses are where subcontractors and craftsmen meet and socialize and where recruitment takes place. Craftsmen are hired from amongst relatives and friends. Strong ties between employers and workers (patrons and clients) and cohesion between members of the same group restrict access to jobs by "outsiders". But the market for labourers (who wait outside the coffee houses) is more open (Assaad, 1993).

The same system is found in Latin America. In Brazil it is a long-established practice in the construction industry for main contractors to subcontract much of the work on a "labour only" basis. The subcontractors then recruit labour through intermediaries, known locally as *gatos*, the Portuguese word for cat (Saboia, 1997). Payment is usually on a task basis, where the task is clearly defined and easy to measure (usually skilled work falls into this category), and on a time basis for unskilled work (Zylberstajn, 1992).

In Mexico, it is the *maestro* who handles labour recruitment and control, as well as training. The contractor or subcontractor often has no direct contact with the workers, instructions being given only through the *maestro*. But although the *maestro* controls the labour process he does not pay the workers, unless he is also acting as a subcontractor. The *maestro* will often recruit his friends and relations, or he may go to known spots where unemployed building workers offer their services. The relationship between the *maestro* and the workers is generally benevolent, almost paternalistic, but it can also be exploitative (Connolly, 2001).

2.2. Evidence of an increase in the use of casual and subcontracted labour

While this is the traditional way of recruiting the bulk of the construction workforce, some workers were always employed directly and on a more permanent basis. These are the “core workers” of the general contractors and those employed in the public sector. However, there is evidence from many countries that the permanent, directly employed workforce has declined in recent years, while the proportion of workers employed through subcontractors and intermediaries, on temporary and casual terms, has increased.

The proportion of workers employed through subcontractors in Malaysia increased only slightly from 71 per cent in 1983 to 74 per cent in 1998. But disaggregated data show that the increase was much higher amongst foreign workers and particularly amongst skilled foreign workers. The percentage of the latter group employed through subcontractors increased from 40 per cent to 80 per cent between 1983 and 1992 (Abdul-Aziz, 2001).

In Sri Lanka, economic liberalization has led to major contractors shedding most of their workforce. This development has been accompanied by an increase in self-employment and subcontracting and the emergence of more small contractors. Interviews with 3,300 construction workers on building sites in Sri Lanka revealed that 82 per cent of the skilled workforce and 93 per cent of the unskilled workforce are employed on a temporary basis, either as casual workers or through labour subcontractors (Jayawardane and Gunawardena, 1998).

In the Philippines also, construction companies continue to downsize their regular workforce. It is estimated that 85 per cent of the 1.35 million wage and salaried workers in the construction industry in January 2000 were temporary workers or project-based employees (Yuson, 2001). In India, an estimated 73 per cent of all construction workers are recruited and controlled indirectly and on a temporary basis by *mistris* or *jamadars* (Vaid, 1999).

China has not escaped the trend. State-owned enterprises (SOEs) and construction collectives (run by local government or communities in urban and rural areas) still undertake most construction work. Although there is a growing private sector (including foreign companies) it is still small, accounting for only around 2 per cent of all employment (Lu and Fox, 2001). Prior to 1984 most SOEs were general construction companies, carrying out all of the trades needed for construction work. These were huge organizations with a permanent workforce with fixed-worker status, which meant that workers could not be dismissed unless they committed a crime. However, this was found to be an inefficient form of organization for construction work. A reform programme entitled “Separation of management from field operations” was launched in 1984. Today the general contracting companies do not directly employ any field workers; instead they are employed on a temporary basis by urban collectives. As a result, the proportion of permanent employees in the Chinese construction industry has declined dramatically, from 72 per cent in 1980 to 35 per cent in 1999 (Lu and Fox, 2001).

Even those who continue to have permanent status now have to renew their contracts every few years. In 1984 the State Council (the central Government) issued a decree which required that fixed-worker status should be ended. Clause 13 of this decree, headed “Employment policy of construction and installation enterprises shall be changed”, reads as follows:

The state-owned construction and installation enterprises shall reduce the number of “fixed workers” gradually. In the future they shall

not, in principle, recruit any fixed worker except skilled operatives necessary to keep the enterprise technically operational. They shall enter into an employment contract with the recruits for a limited number of years. The enterprises shall increase the proportion of “contract workers” in their workforce (Lu and Fox, 2001, page 28).

In Brazil the practice of employing labour through subcontractors (*gatos*) increased during the economic crisis of the 1980s and has gone on increasing during the 1990s. An analysis of data from the national household survey shows that employees whose recruitment has been registered with the Labour Ministry (assumed to be the permanent staff of general contractors) comprised 41 per cent of the construction workforce in 1981, falling to 20.9 per cent by 1999. During this period, unregistered workers and self-employed workers rose from 56.7 per cent to 74.6 per cent. At the same time there was an enormous expansion in the number of employers (from 2.4 per cent to 4.4 per cent of the workforce), most of whom are believed to be *gatos* (PNAD, 1999).

In Mexico, almost two-thirds of the workforce of those contractors who are registered by the Mexican Chamber of the Construction Industry (CMIC) are casually employed manual labourers (*obreros* as opposed to *empleados*). This has not changed much in the past ten years. The real change in Mexico has been a dramatic fall in the share of these registered firms in total construction output, from 78 per cent in 1991 to 37 per cent in 1999. This was accompanied by a proportionate decline in their share of the total construction workforce, from 24 per cent in 1991 to only 13 per cent in 1999 (Connolly, 2001). The corollary to the declining importance (in terms of both output and employment) of what may be called the “formal” section of the industry is an increase in activity (and employment) by small and unregistered builders and self-build activities. The cement board recently estimated that 60 per cent of domestic consumption of cement is by small and self-builders. While small builders have traditionally been active in residential building, it would appear in Mexico that the “informalization” of the production process is now occurring at a higher rate in non-residential building (Connolly, 2001).

Similar trends can be detected in Africa. In Kenya, as in Mexico, data on cement consumption suggest an increase in building activity by small unregistered builders, operating in the informal part of the industry or the domestic sector (Wells, 2001). It is hard to find reliable employment data for African countries. But published data, in both Kenya and the United Republic of Tanzania, do show employment in the construction sector to have stagnated or declined, while informal sector surveys have picked up a large and increasing number of construction workers in enterprises with less than five or ten employees (Wells, 1999; Njeri Wachira, 2001). This apparent shift in employment to very small enterprises in part reflects the fact that the larger contractors operating in these countries have shed their directly employed workers in the face of declining workloads (as has happened elsewhere in the world) and resorted to the use of subcontractors and intermediaries for their labour supply. Labour subcontractors with some skills, known locally as *fundis*, are now acting as gang leaders and suppliers of labour to larger firms, with whom they may once have been employed and where they may have learned their skills. But there is also evidence that the *fundis* are now bypassing the more formal part of the industry (large contractors and professionals) and entering directly into contracts with private clients (building owners) to supply labour for their projects, while the clients themselves (or their foremen) provide materials and coordinate the work of the various trades. While this is the way that houses have traditionally been procured, many building owners or clients are now choosing to commission non-residential buildings through what has been termed “the informal construction system” (Wells, 2001).

There is evidence of similar developments in South Africa where official data show a steady decline in construction employment in the formal sector from just over 400,000 in

1993 to 254,000 in 1999, while employment in the informal sector expanded to reach 243,000 in 1999, almost equal to that in the formal sector (van Huyssteen, 2001). The Government's White Paper, "Creating an enabling environment for reconstruction, growth and development in the construction industry", explains this in the following terms:

Responding to the decline in investment and accompanying volatility, South African firms – in conformity with global trends – have adopted more flexible production strategies with the shedding of labour obligations and an increasing reliance on unregulated labour-only subcontracting (Department of Public Works, 1999, page 15).

However, in South Africa (as in Kenya and Mexico and possibly also in Brazil) the outsourcing of labour by formal sector firms has probably also been accompanied by a shift in production from the formal to the informal sector.

In India also, much building activity is undertaken directly by small enterprises (under a *mistry*) hired directly by building owners. This is known as the *Naka/Mandi* section of the industry. *Naka/Mandis* are points in cities where workers gather in the morning to wait for customers, who come from the mass of individual house owners and petty contractors to hire them as required. Although there is no reliable data, this section of the industry appears to be increasing in places like Mumbai and Delhi (Vaid, personal communication).

Even in China, there is a section of the industry (comprising mostly craftsmen and labourers working alone on a casual basis) that caters to individual house owners. A major portion of activity in the domestic sector is not recorded, but the size of the subsector in employment terms can be estimated by subtracting the total number of workers from the total workforce in the construction industry. The conclusion is that there were around 6.5 million workers in the domestic sector in 1999, which is 19 per cent of the total workforce of 34.1 million (Lu and Fox, 2001). While not as high as in some other countries, the proportion of workers in the domestic sector is still significant.

2.3. The increase in labour subcontracting in developed countries

In the majority of developed countries significant stabilization of the construction workforce was achieved in the boom years of the 1950s and 1960s. By 1970 direct employment by general contractors was the norm. However, in the last two to three decades (since the mid-1970s) there is evidence of a massive shedding of labour by contractors (and subcontractors) in many countries in favour of outsourcing.

Amongst European countries, the trend to outsource has been most evident in the United Kingdom and in Spain. In Spain, the construction industry was in severe recession from 1975 to 1985, during which period nearly half a million jobs were shed. The industry that came out of the recession was very different from the industry that entered it (Byrne and van der Meer, 2000). The most significant changes in the employment relationship are the persistent expansion of temporary employment and an increase in the level of self-employment. The proportion of temporary workers doubled between 1987 and 1991 and continued to rise in the 1990s. In 1999, 61.7 per cent of Spain's 1.5 million construction workers held temporary contracts (compared with 32.7 per cent in the economy as a whole). A significant number (106,000 in 1998) are employed through temporary employment agencies, which were legalized in 1995. Self-employment has also increased and varies between 17 per cent and 23 per cent. It is highest (over 35 per cent) amongst electricians and plumbers, around 16-17 per cent in general building and only 6-7 per cent

in civil engineering. Many of the self-employed (without employees) are believed to be actually working for employers (*falsos autónomos*), but have to pay their own social security contributions.

In the United Kingdom, the last two to three decades (from the mid-1970s) have seen a massive shedding of labour by contractors in favour of outsourcing. Subcontracting has also increased. A survey of building sites in 1995 found as many as five tiers of subcontracting in the chain, with the main project manager having little control over, or even knowledge of, the subcontractors below the second tier (Harvey, 2000). The construction industry is now characterized by the “hollowed-out firm” relying on nominally self-employed labour, most of which is supplied through labour agencies or labour subcontractors. In 1977 self-employed labour comprised under 30 per cent of the construction workforce, but by 1995 the level had risen to over 60 per cent. The proportion of manual workers who are self-employed and working for labour contractors is even higher. While the process of outsourcing labour has also affected other industries, construction was disproportionately affected, accounting for 45 per cent of all self-employed workers in 1993, compared with 7 per cent of the total workforce (Harvey, 2000).

Although the trend to outsource labour through subcontractors and other intermediaries has progressed furthest in Spain and the United Kingdom, it can also be detected across Europe. A survey of 200 large construction employers in nine European Union (EU) States in 1995 found more than half had increased their use of fixed-term, temporary and casual contracts in the previous three years, while 40 per cent of responding firms reported increases in subcontracting. Germany, Netherlands, Spain, Sweden and the United Kingdom were the countries with the highest proportion of firms reporting an increase in temporary work, while Germany, Netherlands, Spain and the United Kingdom had the highest proportion reporting increases in subcontracting (Druker and Croucher, 2000). From Turkey there are reports of the development of “secondary subcontracting”, which is described as the addition of another ring, or rings, to the production chain (Sözen and Küçük, 1999).

Labour subcontracting is also growing in the United States. Increasingly, general contractors do not do the work themselves, but offload the supply and management of labour (and the risks involved) onto subcontractors. They sell, rather than solve, the construction problem, so that the actual work is pushed further away from the prime contract between the owner and the general contractor. However, general contractors keep control of materials, hence subcontracts are increasingly concluded on a labour-only basis. Evidence for this trend is found in the fact that general contractors’ share of the workforce (apart from heavy and highway work) fell from 35 per cent in 1967 to 24 per cent in 1997 (and one-third of these are not construction workers). By comparison, the share of the labour force employed by special trade contractors rose from 48 per cent in 1967 to 63 per cent in 1997 (Philips, 2000). There is also evidence of an increase in the use of “agency labour” in the construction industry (*ENR*, 2000b).

There is little doubt that the use of non-standard forms of employment (casual, temporary, self-employment) and the recruitment of labour through intermediaries (agency labour, labour-only subcontracting) have become common practices in many industrialized countries. Employment practices in some developed countries are now rapidly approaching those of the developing countries.

2.4. The declining role of the public sector

As a purchaser or owner of construction services the State can play a moderating influence, creating some stability in the turbulent construction market by counter-cyclical spending (Philips, 2000). As a direct provider of construction, the State can also provide stable employment for at least a section of the workforce. However, in many countries the role of the State both as a client of the construction industry and as a direct provider of construction services (on the demand and on the supply side) has diminished.

On the demand side, reductions in public spending have been widespread. This may be for a variety of reasons: because services previously provided by governments have been privatized, because of fiscal prudence, or simply because governments are bankrupt. Often reductions in public spending are a precondition for financial support from the World Bank/International Monetary Fund (IMF). For example, in Kenya there was a sharp decline in government expenditure on roads and on buildings in the early 1990s. In 1995 public building activity in the main towns was only 3 per cent of what it had been in 1982 (Wells, 2001). In Malaysia, the privatization of infrastructure provision took off in the 1990s, so that government funding of civil engineering projects fell from 41 per cent of the total in 1992 to 30 per cent in 1998. The trend is apparent in developed countries also. In the United States public sector funding declined to 22 per cent of the total in 1997 (17.6 per cent state and 4.4 per cent federal). In Germany public demand for building work fell from 30 per cent of the total in 1970 to less than 15 per cent in 1997 (Bosch and Zühlke-Robinet, 2001).

The government role as direct provider of construction services (i.e. the supply side) and employer of construction labour has also declined. Governments in one country after another have chosen, or been forced, to reduce or disband their construction workforces. The declining share of publicly funded construction is increasingly implemented by the private sector.

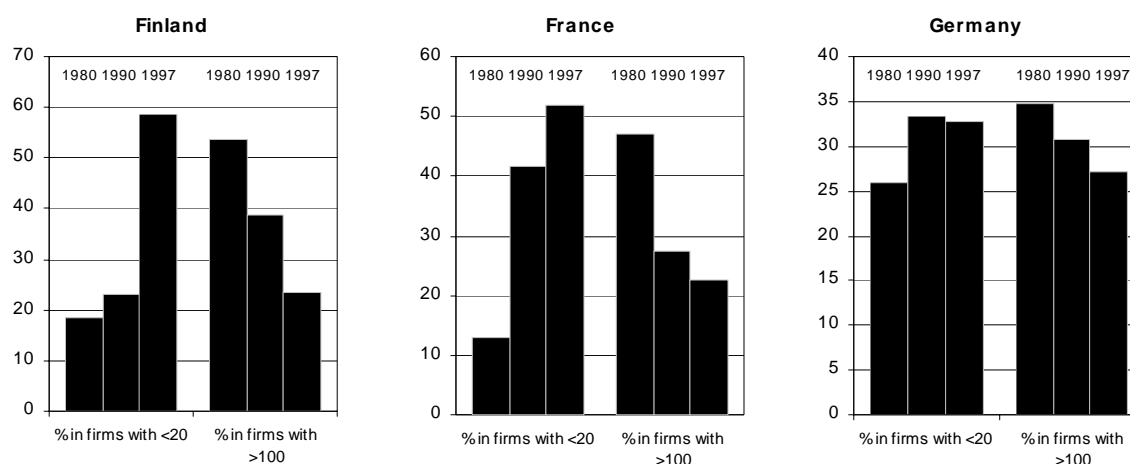
Nowhere is the process of privatizing construction provision more apparent than in the former Communist countries. Poland may be used here to illustrate the trend. Up until 1990 there were about 900,000 workers employed in 2,300 state-owned and cooperative construction enterprises in Poland. There was also a private sector, but it was very scattered – 5,000 medium-sized and small private enterprises employing around 400,000 people. The private sector accounted for 34 per cent of output and 36 per cent of employment in 1990. In the space of just two years – by 1992 – that share had doubled to 79 per cent of output and 72 per cent of employment. By 1999 the private sector was responsible for 95 per cent of output and 93 per cent of employment (Sochacki, 2001). The switch from public to private production was accompanied by a big change in the employment structure of the industry, in particular the substitution of permanent contracts by temporary ones. The number of self-employed workers also increased.

2.5. Changes in the structure of the industry

The growth in the practice of outsourcing labour through subcontractors that has occurred throughout much of the world in the past two to three decades has allowed large construction companies (both public and private) to divorce themselves from the physical work of construction and concentrate on management and coordination functions. In many countries they have turned into service companies, finding clients and marketing products that are then produced by subcontractors. Some have expanded by taking responsibility for other service activities up and down the supply chain, while others have diversified away from their core business into other sectors. The top firms have moved into international markets, through mergers and acquisitions.

The large establishments may still be responsible for a significant or even an increasing share of output. But everywhere they employ a declining proportion of the workforce. Figure 2.1 shows the changing distribution of the construction workforce in three Western European countries. The decrease in the proportion of the workforce in large firms and the increase in the proportion in small firms is very apparent. In France and Finland more than 50 per cent of construction workers were employed in firms with fewer than 20 workers in 1997. The situation is similar in other European countries, as well as in the United States (Philips, 2000). In Spain 77 per cent of construction workers are now employed in small firms or are self-employed (Byrne and van der Meer, 2000).

Figure 2.1. Distribution of employees by size of firm in the building industry in selected Western European countries



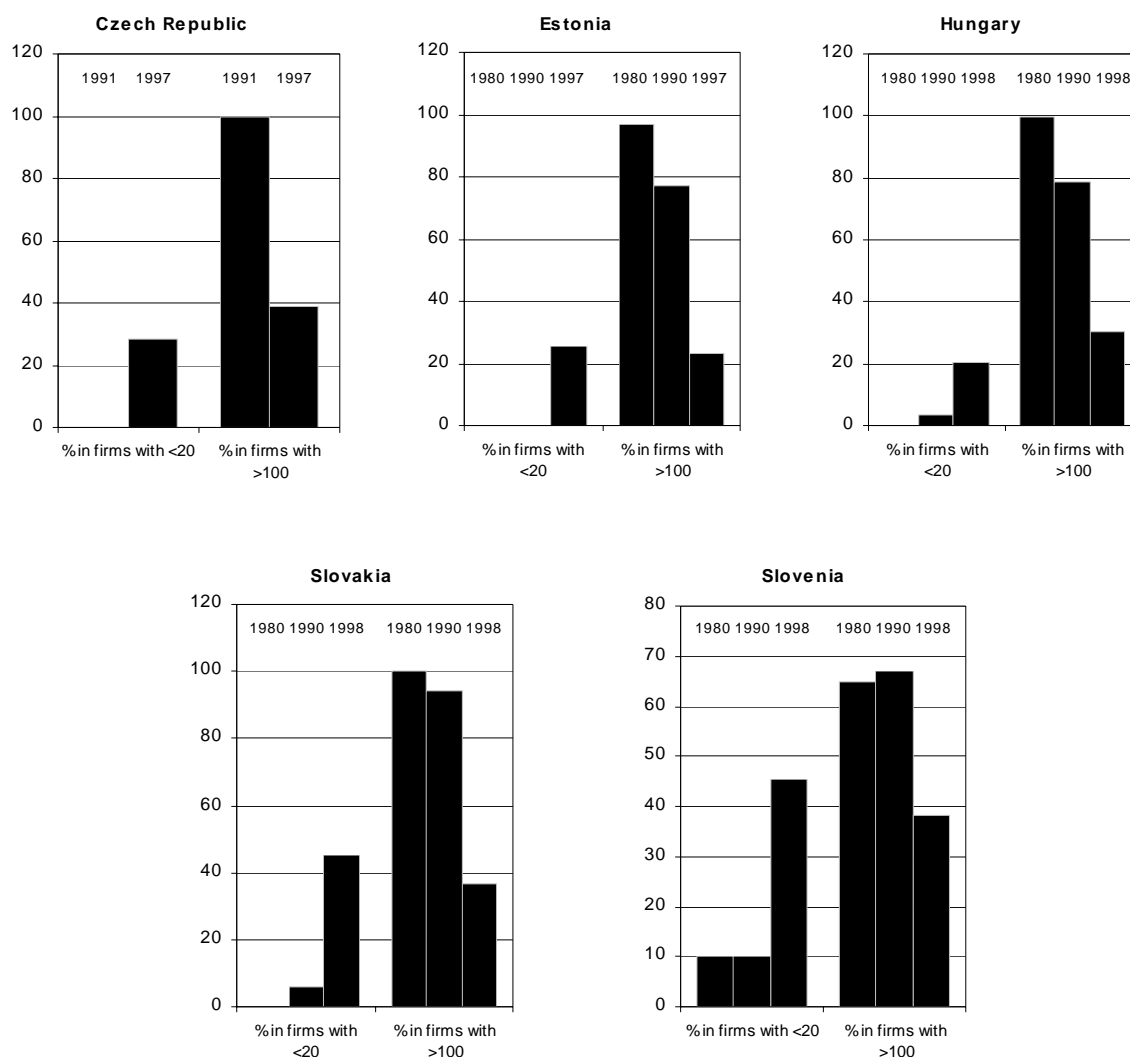
Note: Figures for 1980 and 1990 denote West Germany.

Source: UN/ECE Annual bulletin of housing and building statistics for Europe and North America, 1996, 2000.

The number of large firms has diminished as the importance of small firms has grown. Forty years ago in Germany there were 130 companies with more than 500 employees and now there are only 50 (Bosch and Zühlke-Robinet, 2001). In Germany, France and Finland only around one-quarter of construction workers were employed in firms with more than 100 employees in 1997.

The same trend, only more pronounced, can be seen in the former communist countries of Eastern Europe from 1990, as is clear from figure 2.2. Most dramatic is the decline in the share of the workforce in large enterprises (more than 100 employees) from close to 100 per cent in the Czech Republic, Estonia, Hungary and Slovakia in 1980 to less than 40 per cent in 1998.

Figure 2.2. Distribution of employees by size of firm in the building industry in selected Eastern European countries



Source: UN/ECE Annual bulletin of housing and building statistics for Europe and North America, 1996, 2000.

Data from Brazil (table 2.1) also very clearly demonstrate the changing structure of the industry and the increasing importance of small firms. Between 1988 and 1999 there was an explosion in the number of small establishments. During this period the proportion of workers employed in large enterprises halved while the proportion employed in small enterprises more than doubled. Very small enterprises (less than ten workers) accounted for only 3.7 per cent of employees in 1988 but 13.2 per cent in 1999.

It may be concluded that there has been a dramatic change in the structure of the construction industry in the past three decades, involving a process of concentration at the top and fragmentation at the bottom. The large enterprises which are responsible for a significant share of construction output are increasingly removed from the construction site and construction workers. Most develop a stable core workforce, consisting mainly of white-collar workers. The subcontractors and labour contractors who are now the main employers of the construction workforce are small, sometimes very small, firms.

Table 2.1. Number of establishments and distribution of construction workers by firm size in Brazil, 1988 and 1999

| Establishment size | No. of establishments (1988) | No. of establishments (1999) | % of employees (1988) | % of employees (1999) |
|--------------------|------------------------------|------------------------------|-----------------------|-----------------------|
| 0 | – | 22 317 | | |
| 1-9 | 9 730 | 46 870 | 3.7 | 13.2 |
| 10-49 | 5 835 | 13 933 | 13.1 | 25.5 |
| 50-499 | 3 133 | 4 147 | 46.1 | 45.1 |
| >500 | 302 | 190 | 37.0 | 15.8 |

Source: Relação Anual de Informações Sociais (RAIS), various years, Brazil, Labour Ministry.

2.6. Factors behind the changes

There are a number of reasons why the subcontracting (or outsourcing) of labour has persisted and increased in almost all parts of the world in the past three decades. These may be divided into two groups. The first group is specific to construction and relates to the nature of the construction process, which has not changed over time. The second group of factors relates to the context in which construction, and other economic activity, takes place, where there have been big changes.

First, outsourcing offers contractors and subcontractors flexibility in the recruitment of labour. It enables them to get the labour they need when they need it and to pay for it only when it is needed. Flexibility is particularly important in construction due to fluctuating labour requirements. These stem in part from variations in total output (construction investment is notoriously volatile), but more important is the fact that neither construction products nor skills are homogeneous. Building construction in particular requires a variable mix of skills. A further complication arises from the widespread use of the “contracting system”, whereby production is effected through discrete contracts let to different contractors through a process of competitive bidding. The labour requirements of any one contractor will change with his “portfolio” of projects. But having to compete for contracts means that no contractor is aware of his workload in advance so he cannot plan his labour requirements and is not able to adapt his portfolio of projects to suit the skill mix of employees. The use of temporary contracts or subcontracting represents an easy way of adjusting to changing labour requirements.

An additional advantage of using subcontracted labour in construction is that it offers the possibility to delegate the responsibility for supervision. This is important in an industry where the dispersed location of sites and the craft nature of the production process both make supervision difficult. Hence, employing labour indirectly, through subcontractors, enables main contractors both to get the flexibility they need and to pass the problem of labour control to the subcontractor. It can therefore contribute substantially to a reduction in costs, even if all labour regulations are adhered to for the subcontracted labour (Saboia, 1997).

However, the outsourcing of labour also offers the opportunity to secure a further reduction in costs by avoiding restrictive labour legislation and welfare regulations. This opportunity is very appealing in construction as in other sectors. This is particularly so in countries where the “on-costs” of labour are extremely high or where regulations are complex and therefore costly to implement. In these situations there is a strong incentive to recruit labour through subcontractors, who are more able or more willing to evade legislation.

Brazil is one such case where the on-costs of employing labour are very high, estimated at between 90 per cent (Saboia, 1997) and 187 per cent (SindusCon-SP, 2000) of the basic wage costs. One of the main motivations behind the practice of labour subcontracting in Brazil is to avoid these high labour charges that are imposed by law on all registered employees. Very high labour charges in Germany were a major factor leading to a reduction in the number of workers covered by the regulatory system following reunification (Bosch and Zühlke-Robinet, 2001). In the United Kingdom the rapid growth of self-employment can be traced to the fact that the self-employed status enables employers to save on National Insurance contributions and other benefits such as holiday pay. The savings to employers have been estimated at 20 per cent to 30 per cent (Evans and Lewis, 1989) creating an irresistible competitive pressure to shed direct labour.

The opportunity to cut costs, while always attractive to employers, becomes imperative during periods of intense competition for work, such as occur during economic downturns. In the 1970s many countries experienced a severe drop in demand which led to excess supply in construction markets and increased competition for contracts. Contractors cut costs by managerial innovation (project management), by outsourcing labour, and in the United States by undermining collective agreements through the use of non-union labour.

But there have been recessions before, which raises the question of why it was this particular recession that triggered such a fundamental shift in employment practices in many parts of the world.

The answer lies in the fact that the 1970s also saw an acceleration in the process of integration in the world economy, generally referred to as globalization. As barriers to the movement of capital and products came down, increasing international competition put pressure on producers, first in manufacturing and later in services, to secure a significant reduction in production costs. Construction is not an internationally traded commodity, but it is an important component of investment, and hence of business costs, for producers of goods which are traded internationally. As these producers (e.g. in manufacturing or tourism) come under increasing pressure to reduce costs, so they in turn put pressure on the construction industry. Hence it is mainly through the buyers of construction services (the clients) that the increasing pressure for lower costs is transmitted to the construction industry.

What has happened in construction labour markets is, of course, only part of a much more general phenomenon, affecting many other economic sectors. Standing (1999) has explained the trend to outsource labour in terms of changes in the world economy and in policy options, as well as changes in perceptions of policy options. The higher costs associated with a permanent workforce were bearable when trading blocks were more restricted, when it was presumed that the advanced economies were mainly trading with countries with similar levels of labour rights, and when there was a general consensus among the main trading nations to bear the costs of a protected labour force. However, this all changed in the 1970s with the rise of the newly industrializing countries which had fewer labour rights and lower labour costs. The presumption of a closed economy and trade between countries with similar labour rights could no longer be maintained. Arguments grew that capital will avoid countries with high taxes, high wages or where labour is heavily protected. Hence governments have sometimes joined with clients in putting pressure on the construction industry to lower its costs, as countries compete to attract footloose business.

These pressures led in some countries to the adoption of policies deliberately intended to deregulate labour markets. Deregulation of this kind may have been adopted voluntarily in many high-income countries, but the developing countries generally had no choice.

Deregulation was part – an important part – of the conditionality attached to loans from the World Bank or the IMF. The implications for the construction labour force will be examined in the next chapter.

3. The implications of changes in the employment relationship

Employment in small enterprises on casual and temporary terms, often through intermediaries, which is now the norm in the construction industry in much of the world, has a profound effect upon the construction workforce and their labour rights and upon skill formation in the industry. This chapter outlines the major developments and assesses their implications.

3.1. Erosion of social dialogue and undermining of collective agreements

Social dialogue and collective agreements have special significance in the construction industry because of the specific circumstances of construction, notably the high mobility of labour between employers. Collective bargaining provides a mechanism for the provision of social benefits and training on a shared basis. Multi-employer bargaining over pay can also take wages out of competition and increase the likelihood that firms, particularly small firms, will play by the same rules (Druker and Croucher, 2000).

Paradoxically, the increase in flexible working practices and the proliferation of small firms that has occurred in the industry in many countries in recent years, has intensified the need for collective action while reducing the chances of achieving it.

Europe and the United States

Druker and Croucher (2000) examine the effects of recent changes in labour practices in the construction industry (increased temporary contracts and subcontracting) on collective bargaining in Europe. They find that national collective bargaining has survived in most European countries, including the United Kingdom (where the move towards labour subcontracting has been most pronounced). However, it has been severely weakened and multi-employer collective agreements have been destabilized. This is traced to a decline in union membership and union density across Europe, as well as a decline in membership of employers' associations. The result is that multi-employer agreements are less widely observed. They are also undermined as employers who purport to support them apply them to only part of the workforce, for example, core workers or local workers.

The problems are exemplified in the case of Spain, where fragmentation of work and short-term contracts create obstacles to collective action in defence of working conditions. Union density in 1997 was 10.7 per cent in the construction industry compared to the economy wide average of 17.8 per cent (van der Meer, 2000). The two construction trade unions are relatively small and underdeveloped, largely dependent on the financial support of the State and with only a limited presence in the workplace, especially in small firms and sites. Employers' organizations face similar problems. These organizations have managed to develop national-level collective bargaining structures, which have set wages and hours of work since 1992, but ensuring compliance with the agreements has proved impossible, given the unions' weak presence in the workplace and the very large number of small firms and sites.

In Germany, the construction labour market is governed by a dense network of regulations which was built up in the post-war period on the basis of collective bargaining. In 1998, 40 per cent of construction workers were still members of the one trade union for the construction industry, IG BAU. The employers' organization was equally strong and

united. Until recently, a host of centrally negotiated collective agreements operated in the industry, most of which were declared generally binding. However, the system is now under intense pressure as a result of the outsourcing of work to foreign subcontractors not subject to the collective agreements, and the fragility of the regulatory system in East Germany. Rifts have occurred between the employers in East and West and since 1996 pay bargaining has been conducted separately. The parties to the collective agreements have developed joint strategies in an ongoing attempt to adjust the regulatory framework to current realities (Bosch and Zühlke-Robinet, 2001).

In the United States, where workers are organized according to trade, there are currently 15 distinct unions of construction workers affiliated to AFL-CIO (Philips, 2000). The construction unions have been strong. Pre-hire agreements, obliging employers to use union labour, were legalized in 1959 (Allen, 1994). However, high strike rates and rapid wage inflation in the 1960s and early 1970s led to pressures from management to cut costs. A series of court cases in the early 1970s reduced the costs of terminating collective bargaining agreements, allowing contractors to pull out of pre-hire agreements and opening the door to “double-breasting” (a contractor setting up a non-union subsidiary and operating both side by side). Also, under the Greenhoo rule (1973) temporary workers recruited through agencies are prohibited from joining trade unions unless both the employer and the labour agency agree, which is rarely the case (*Wall Street Journal*, 2000b). These decisions facilitated an increase in “open-shop” sites and the use of casual labour and heralded a dramatic decline in union density. Average union density over the country as a whole fell from 42 per cent in 1970 to 22 per cent in 1992 and 18.5 per cent in 1996 (Allen, 1994; Applebaum, 1999). But the average figure covers wide variations between states. In general the northern states have higher densities than the southern states. The extremes are 2 per cent in North Carolina and 58 per cent in Illinois (Philips, 2000). Open-shop sites had 60 per cent of the market by the early 1990s (Allen, 1994).

The erosion of union power in the United States was also facilitated by a decline in public sector work and the repeal of prevailing wage legislation. The Davis-Bacon Act (1931), and similar legislation at state level, ensures that wages and conditions of work set by collective bargaining are adhered to on government projects, in the spirit of the Labour Clauses (Public Contracts) Convention, 1949 (No. 94). However, between 1969 and 1993 nine states repealed their prevailing wage laws (Kessler and Katz, 2001). The process looks set to continue under the Bush Administration, which issued an executive order in February 2001 effectively barring labour agreements on federally funded construction projects (AFL-CIO, 2001a). A few months later they put a temporary suspension on “responsible contractor” rules that take into account a corporation’s record in complying with legislation, including that related to civil and workers’ rights, before awarding government contracts (AFL-CIO, 2001b).

Politics has also played a role in the erosion of union power in the United Kingdom, where the principle of organizing through public sector employers (top-down organizing) was strong. Central and local government clients have a long tradition of inserting labour clauses in commercial contracts, obliging the parties to adhere to wages and conditions negotiated through collective agreements. There were also clauses specifying that workers must be in direct employment and requiring a strong public sector presence in the form of direct labour organizations (DLOs). But the Conservative Government elected in 1979 enacted policies in favour of competition and against contract compliance and labour clauses. DLOs were forced to compete for work in 1980. Trade unions were progressively emasculated and contract compliance severely circumscribed with the Local Government Act of 1988. By 1999 union density in the private construction sector had declined to 14 per cent (Harvey, 2000).

Developing countries

In many of Asia's newly industrializing countries trade unions lack strength due to restrictive legislation and employer resistance. But in the construction industry union membership is even lower than average and is commonly confined to core workers. The majority of construction workers are not members of a trade union and most employers do not accept collective bargaining. In some cases this is because the law does not allow temporary, self-employed or foreign workers to join trade unions. For example, in the Philippines an estimated 85 per cent of wage workers are "project based" (temporarily employed) and such workers are legally prohibited from forming or joining a trade union for the purposes of collective bargaining under Department Order No. 19 (Yuson, 2001). In 1997 only 20 establishments in the construction industry were unionized, and total union membership was only 3,000, which gives a density of about 0.2 per cent of wage and salary workers. Union members comprise only those on permanent contracts and not the transient project-based employees. The huge bulk of the workforce in the construction industry, the unskilled and semi-skilled manual workers, are unorganized. The seven collective bargaining agreements in the construction industry in 1995 covered only 1,693 workers (Yuson, 2001).

A similar situation is found in Malaysia, where construction workers working for *kepalas* are regarded as self-employed and as such not eligible for union membership. Another major factor is the diminishing supply of local workers and the government prohibition on foreign workers joining trade unions. Trade union membership even for regularized foreign workers has been proscribed, although there is as yet no explicit legislative or regulative provision for this. The Ministry of Labour puts the union density for the construction industry at 0.4 per cent, which is amongst the lowest of all economic sectors. Also, there have been few collective agreements in construction, compared with other sectors (Abdul-Aziz, 2001).

However, in India temporary (contract) labourers are entitled to form trade unions, raise collective industrial demands, engage in collective bargaining and take strike action if necessary. There are national federations of unions representing the bulk of ordinary construction workers but they are not known to have engaged in any collective bargaining at industry or enterprise level (Vaid, 1999) and none of the 2,600 building workers interviewed in five cities (all of them employed through subcontractors) were found to have paid any union fees, attended any meetings or voted in any union elections (Vaid, 1999). The reasons given for not joining a trade union include the migratory character of workers, illiteracy, fear of job loss and victimization. At the base of the problem is the labour recruiting system, which has encouraged the recruitment of labour based on family, caste and village ties. While most workers report that entry into the construction workforce is easy, this is only the case if the entrant has the right contacts and in particular a good relationship with a *mistry* or *jamaradar*. The construction worker will need to maintain that good relationship if he wants to be assured of regular employment (Vaid, 1999).

Core workers in the head offices of large private and public sector firms in India are more organized and more active. The unions are strong, engage in collective bargaining and are capable of going on strike. However, the members are white-collar workers who have little to do with ordinary construction workers.

Similarly, in Egypt the trade union is an organization whose primary role is to represent and serve the interests of workers employed on legal contracts, the majority of whom work for public sector firms. Although there are a large number of members amongst casual workers, this is only because union dues have to be paid for three years before workers can get a construction trade marked on their identity card. Most construction workers have no interaction or involvement with the trade union other than

this forced membership which is required to obtain their identity card. Many do not even know what a union is. A further role of the trade union in Egypt has been to ensure that labour laws are properly enforced. But since such laws do not apply to casual workers (who constitute 90 per cent of the construction workforce) the union itself is also seen as irrelevant (Assaad, 1993).

A similar situation is found in Mexico and Brazil. In Brazil union membership is estimated at 10 per cent of the workforce but restricted to those with formal contracts. In Mexico labour unions are important actors within the corporatist system, belonging to the main workers' syndicates which, until recently, formed part of the ruling one-party political system. But they have been weakened by a slump in the demand for labour in the formal sector and also by the erosion of the position of the ruling party. They do not actively campaign to defend jobs or improve labour conditions. Most workers are unaware that they are represented by a union and (as in Egypt) many do not know what a trade union is (Connolly, 2001). In both countries, collective bargaining is conducted at the industry, regional or company level, but the content of negotiations is limited.

Trade unions were established in colonial times in many African countries. There are unions representing construction workers but the number of paid-up members has declined sharply in recent years. This is attributed to an increase in the practice of employing labour through subcontractors and a consequent decline in the proportion of the labour force employed in large firms, as well as to a fall in employment in the public sector. Declining membership presents a very big problem and trade unions are struggling to survive. Mergers are seen as an immediate short-term solution. By amalgamating many industries and trades within one union it is hoped to increase membership and hence financial viability.

In Kenya, for example, construction workers are now represented in the Kenya Building, Construction, Timber, Furniture and Allied Industries Employees Union. The union had 15,000 members on its books in the construction division in 2000, but official data show that paid-up membership in 2000 was only 3,719 (Kenya, 2000). Union officials point to the Trade Union Act, which requires union members to have a contract of employment, as the cause of the problem, arguing that this disqualifies most construction workers who operate in the informal sector. But, although a change in the law may be appropriate, it seems unlikely that this is the real deterrent. The underlying reason for low union membership is undoubtedly the same combination of factors prevailing elsewhere – the high turnover of labour, casual nature of employment and fears of job loss.

The main role that trade unions play in Kenya is still the traditional one of engaging in collective bargaining with employers and the Government. The construction trade union negotiates annual wage guidelines with the employers' organization. The negotiated agreement is registered and through this process is extended to all workers and employers in the industry, whether parties to the agreement or not. In theory, this is enforceable by law through the Ministry of Labour. But in practice enforcement is impossible. The employers' organization represents only the large general contractors who are no longer the major employers of labour. Small contractors and subcontractors are not organized and do not abide by the agreement. The Ministry does not have the resources or the will to police construction sites to ensure that collectively agreed wages are paid. And the union does not play any part in ensuring that the wage guidelines are adhered to, hence they only exist on paper (Njeri Wachira, 2001).

It may be concluded that in many countries around the world both workers' and employers' organizations have been seriously weakened by the increased fragmentation of the industry. Collective bargaining has been undermined almost everywhere and collective

agreements, where they exist, are applied to a small and decreasing proportion of the workforce.

3.2. Lower levels of economic and social security

Standing (1999) identifies seven forms of labour security. Some of these are covered under separate headings in points 3.1 (representation and collective bargaining), 3.3 (occupational safety and health) and 3.4 (skills and training). Here we shall consider just two forms – income security and social security.

3.2.1. Income security

There are two basic considerations affecting security of income: opportunities to work (number of days worked) and the wages paid for the work done. Changes in the employment relationship have basically affected both.

Employment

By definition, casual and short-term employment means that there will be frequent changes of job. Most temporary contracts are for the duration of a project. But, as subcontracting increases, such “projects” correspond to ever-smaller units of work, which means that most temporary contracts are now very short. In Spain the average number of contracts per worker per year was almost eight in 1998 (Byrne and van der Meer, 2000). With this rate of turnover, it is almost inevitable that there will be periods spent out of work.

Recent research in the United Kingdom found much higher levels of unemployment amongst temporary workers than workers on permanent contracts (Harvey, 2000). On one site employing 1,400 construction workers supplied mostly by labour agencies, there was a labour turnover of 200 per cent in six months. Workers have no protection from dismissal, which can be without notice and for trivial reasons, such as visiting the doctor or refusing to work on Sunday. Other sites were described as having “the fastest revolving doors in Europe”, such was the turnover of labour. Workers themselves emphasized qualitative aspects of insecurity – the lack of respect, the temporary nature of employment, the vulnerability to dismissal, the loss of workplace solidarity and the resultant stress of all these factors together (Harvey, 2000).

However, the length and frequency of unemployment (as well as wages) depend primarily on demand and supply in the labour market, and ultimately on the state of the economy. In India a growing economy and increasing demand for construction labour has meant that there is currently plenty of work. A survey of 2,600 construction workers in five towns found both skilled and unskilled workers more or less fully employed: 80-90 per cent of the respondents said they could find work for at least 25 days a month and for nine months of the year (Vaid, 1999). The same is true in Malaysia.

On the other hand, in the Philippines underemployment is currently a major problem. Trade union research suggests that for the 85 per cent of construction workers who are employed on temporary contracts, the average employment period in one year varies from four to six months (Yuson, 2001). This total period in work might be divided into two or three projects or phases of projects. Lack of continuous employment affects income and limits the opportunity to acquire skills. In between jobs on construction sites workers in the Philippines are either unemployed or undertake small projects for local householders.

In most countries, the section of the industry that caters to individual house owners (comprising mostly craftsmen and labourers working alone on a casual basis) serves as a safety net – a source of alternative employment (or self-employment) for construction workers who cannot find work in the formal sector. There is evidence from many countries (India, Kenya, Mexico, Philippines) to indicate that workers move regularly between work in the “household” sector (often referred to as the informal sector) and project-based work in the formal sector. In some of the least developed countries in Africa, where there is often little work in the formal sector, the bulk of construction workers will be found in the household sector, which is expanding into new roles (as outlined in section 2.2). What is happening in this sector is hard to ascertain, but will clearly affect the terms and conditions of work in the formal sector.

Wages

As collective agreements have been undermined and apply only to a diminishing core of workers, a two-tier wage structure has emerged in many countries, with both wages and fringe benefits for core workers well above those of the rest of the workforce.

For example, workers on permanent contracts in the Philippines earn much more than workers on temporary contracts (Yuson, 2001). In Brazil, workers on formal contracts earn more than those without such contracts (Saboia, 1997, updated in 2000). Also in China formal employees earn much more than rural labourers (who form the bulk of the workforce) working on the same site (Lu and Fox, 2000). In India the organized section of the construction labour force (those working in large private and public enterprises) enjoys wages and non-wage benefits similar to those found in other organized sectors, while the bulk of the construction workforce receives much lower wages and no benefits.

In Mexico, permanent workers and those working in large firms are paid around 60 per cent more, for equivalent status, than temporary workers and employees in small and micro-firms (Connolly, 2001). In a number of African countries the wage differential between core workers and the rest of the workforce is even greater. In Burkina Faso the core workers receive a salary based on collective agreements which constitutes between two and 12 times the wages paid to unskilled workers (Muteta, 1998). In Côte d’Ivoire the differential is between two and six times as much (Yao Gnabeli, 1998).

For the bulk of the workforce on temporary contracts, wages are increasingly set by the market. Hence the level of wages, like the level of employment, will reflect demand and supply in the labour market. Wide fluctuations are common, in line with the cyclical (and sometimes seasonal) fluctuations in construction output and labour demand.

Research investigating the effect of self-employment on wages in the United Kingdom found a high degree of fluctuation through the economic cycle and also a huge wage dispersion (for the same category of worker) between sites. It was also found that in the five years to 1994 (including a period of recession) two-thirds of those directly employed enjoyed relative wage stability whereas 75 per cent of the self-employed suffered wage cuts which in some cases were in excess of 30 per cent (Harvey, 2000).

Construction workers in a number of other industrialized countries have experienced wage cuts in recent years, as the higher wages that had been secured through collective bargaining (and which may be seen as compensating for higher rates of unemployment and necessary to keep workers in the industry) have been eroded. In the United States, there has been a significant drop in real wages since 1980 and a closure of the union/non-union wage differential (Allen, 1994). Also, in Germany, the social partners have negotiated a number of concessions which have led, in effect, to significant cuts in pay (Bosch and Zühlke-Robinet, 2001).

On the other hand, recent boom conditions in Spain have enabled workers to obtain wages well above the rates set in official wage agreements, although the improvement is described as “fragile” (Byrne, 2000). Similar conditions may be found in some developing countries. For example, in Malaysia buoyant demand and a shortage of local workers have kept wages at a higher level than for comparable work in other sectors, which helps to compensate for the absence of social protection and lower remuneration stability (Devi, 1996). In a recent survey, only 10.7 per cent of local workers and 7.7 per cent of foreign workers expressed dissatisfaction with the level of wages (Abdul-Aziz, 2001). There is also currently strong demand for labour in India which has led to wages, even for unskilled workers, well above the minimum; for skilled workers they are much higher. Interviews on building sites in five towns in 1999 revealed a skilled to unskilled wage ratio of about 3:1. For carpenters, plumbers and electricians the differential is even greater (Vaid, 1999). A similar ratio between skilled and unskilled wages was found in Mexico City (Connolly, 2001).

However, in many other developing countries, where the supply of labour (particularly unskilled labour) is far in excess of the number of jobs, earnings for the majority of construction workers are only around the level of the minimum wage and sometimes even below it.

In Brazil 35 per cent of unregistered construction workers (who form the bulk of the workforce) earned less than one minimum wage in 1999 and 70 per cent earned less than two such wages. It is generally assumed that a family of four would require two minimum wages just to survive. Hence 70 per cent of unregistered construction workers do not earn enough to support even a small family (Saboia, personal communication). It may be concluded that construction workers in Brazil form a large proportion of the working poor. While it is sometimes suggested that employers may offer workers better wages in exchange for not registering work permits (Saboia, 1997), it might be supposed that this additional payment, if any, will be eroded over time as non-registration becomes the norm. Raising wages through increased productivity suffers from a similar problem. Interviews in São Paulo revealed that productivity has increased, but as higher productivity is generalized across the industry, piece-work rates have fallen leaving workers no better off (site interviews, 2000). Also, in slack periods skilled workers take unskilled jobs, putting downward pressure on the wages of the unskilled.

In China, wages for construction workers vary according to location. In Beijing they are currently around 20 yuan for an unskilled worker and 25 for a skilled worker per eight-hour day. Labourers from rural areas are paid around 7,000 yuan per annum to work a ten-hour day, which is just sufficient to provide for food for themselves in the city and to send money home to provide for their families in rural areas. However, the workers sometimes receive less than they should from their employers (the state enterprises that control recruitment) and they are only paid at the end of the year, which is in part so that the employers can gain interest on the wages and in part as a means of keeping the labourers under their control (Lu and Fox, 2001).

Hours of work

In many countries, piece-work is the predominant wage form for temporary workers in the construction industry. Many are forced to work long hours. Others choose to do so, either because the rates of pay are so low or simply because they want to earn as much as possible while work is available. This is particularly so in the case of workers who have migrated from the countryside or from overseas, as is common in many developing countries (Brazil, China, India, Malaysia). A ten to 12-hour day, for six days per week, is the norm. But even in the United Kingdom, recent research revealed that self-employed construction workers are paid per shift (rather than per hour) and the shift is normally ten

to 12 hours per day for six days a week. The introduction of the European Union Working Time Directive (93/104/EC) has had little impact on the self-employed as they are excluded from its remit because of their employment status (Harvey, 2000).

3.2.2. Social security

There is evidence from many countries (as shown below) that employers do not pay into social security funds on behalf of construction workers who are on temporary contracts. Hence, the workers who are most in need receive no social security benefits – no health care, no holiday pay and no protection against loss of pay in periods when they are unable to work due to unemployment, ill health, accidents or old age.

Interviews with construction workers in Malaysia in 1996 revealed that the most pressing concerns of both local and foreign workers revolve around issues of social security, occupational safety and living conditions on site (Abdul-Aziz, 2001). Only a minority of construction workers are covered by the mandatory SOCSO (Social Security Organization) scheme or by a separate mandatory scheme for foreign workers that was introduced in 1996 which provides for compensation in the event of industrial injury leading to incapacity or death.¹ A similar situation prevails with regard to the Employees' Provident Fund (EPF) to which all private sector employers and employees are supposed to contribute, and which provides some financial security to workers in the event of sickness, incapacity or retirement. Contributions are substantial: 12 per cent of the wage from the employer and 11 per cent from the employee, although for foreign workers the employers' contribution is a flat rate of RM5. Non-compliance is rife.

In India, the vast majority of construction workers are not covered by provident fund contributions, although this is mandatory under the law. Other provisions required by law but notable by their absence include: compensation for injuries, medical care, potable drinking water, rest rooms for workers and days off with pay (Vaid, 1999). In African countries only core workers are covered by social security, and not all of them. In Burkina Faso permanent workers in large enterprises receive social security benefits but in small enterprises it is only the employer and his foreman who are covered (Muteta, 1998).

In Brazil payment to the various national social security schemes is compulsory in the case of registered employees (i.e. those whose recruitment has been registered on their work permit, issued by the Labour Ministry) and deductions are made automatically from salaries. Other groups can contribute voluntarily, but voluntary contributions are not often made. The percentage of all workers in the construction industry who are covered by social security contributions declined dramatically from 46.7 per cent in 1990 to only 28.4 per cent in 1999. This is mostly a reflection of a fall in the percentage of registered workers in the total workforce. But there has also been a fall in contributions on behalf of unregistered workers, from 8.6 per cent in 1981 to only 2.8 per cent in 1999. Most labour subcontractors do not register their workers and therefore do not pay labour charges, unless the main employer demands that they do so (which happens when the client has to prove that labour charges have been paid). Thousands of workers are left with little or no social coverage. Many are not even covered by accident insurance.

¹ This is partly because construction employers are obliged to take out private insurance under the Workmen's Compensation Act and this is included in the contract sum and therefore paid by the client.

A similar decline in coverage is reported from Mexico, where the number of construction workers registered under the national social security system fell from 58 per cent in 1993 to only 40 per cent in 1999 (Connolly, 2001).

The problem is not confined to developing countries. A recent study in the United States found that those on temporary contracts are far less likely than permanent workers to receive health and retirement benefits. Many on temporary contracts are also precluded from state and federal worker protection laws because they do not work enough hours to qualify (*Wall Street Journal*, 2000b). Construction workers are also less likely than workers in other industries to be eligible for, or to participate in, pension plans provided by an employer or union. Research by the International Construction Institute has shown that only 35 per cent of wage and salaried workers in the construction industry participated in such schemes in 1995, compared with 65 per cent in mining, 72 per cent in communications and 83 per cent in public administration (ICI, 2001).

In Spain, most workers on temporary contracts are not entitled to benefits during periods of unemployment between contracts (Byrne and van der Meer, 2000). The shift in status of construction workers in the United Kingdom from employed to self-employed also means that they lose their entitlement to sick pay, holiday pay, unemployment benefit and pensions (Harvey, 2000).

Joint funds for the collective provision of benefits which were negotiated in some countries between workers and employers have also been weakened by the change in employment status. For example, in Germany the collectively agreed social fund (financed by a levy on employers) which covered workers for holidays and an additional pension, has been eroded as an increasing number of workers are now employed in very small firms which do not contribute to the scheme. There has also been a deterioration in the security offered to construction workers by the Government, as the bad-weather payment introduced in the 1960s as protection against seasonal unemployment was abandoned in 1996 (Bosch and Zühlke-Robinet, 2001).

It is impossible to avoid the conclusion that the increased use of casual and temporary labour and labour subcontracting that has occurred throughout the world in the past 30 years has led to a significant reduction in the number of construction workers who are covered by social security schemes. In some countries this is because temporary workers are excluded from the provisions of labour legislation. In many more cases there is provision for temporary workers to receive benefits but they are not claimed. There are also reports from a number of countries of outright abuse, such as employers deducting contributions from wages but failing to forward them. The changes in the structure of the industry (with most workers employed in small firms or self-employed) have made voluntary compliance with labour laws much less likely and inspection much more difficult.

3.3. The link to health and safety

The link between recent changes in industrial structure/employment relationships and deteriorating conditions of occupational safety and health in the construction industry is difficult to prove statistically. Data on accidents are notoriously bad, with discrepancies in reporting even within the European Union. In many developing countries there is no reliable data because of lack of insurance coverage, which means that reports of accidents are frequently not filed. Even where there are data, statistical analysis is further complicated by the fact that the rate of accidents varies with cyclical fluctuations in construction output, increasing in economic upturns and decreasing in periods of recession. Hence, secular trends are hard to detect.

Nevertheless, there are some data from national studies to indicate a link. For example, in Spain accident rates in construction have been rising steadily from 97 per 1,000 workers in 1992 to 142 in 1999 (ILO, 1998, 2000).² The persistent increase in accidents is explained by changes in the structure of the industry and in employment and working conditions (Byrne and van der Meer, 2000). Subcontracting (which is now almost universally on a piece-work basis) intensifies the pressure to produce while increasing the difficulties of coordinating work and ensuring site safety. It is estimated that 95 per cent of serious accidents involve workers employed by subcontractors. Most of these workers are on temporary contracts which, in a context of fluctuating demand, encourages them to work long hours in order to make the most of work while it lasts. They are also less likely than workers on permanent contracts to gain the training and experience required to work safely in a dangerous working environment, and they are in a weaker position to refuse to work in unsafe conditions. For these and other reasons, a construction worker with a fixed-term contract is three times more likely to suffer an occupational accident than one with a permanent contract (Byrne and van der Meer, 2000).

Other studies indicate that labour employed through subcontractors is not treated the same way as directly employed labour in relation to health and safety. Research in nine large, high-profile companies from the engineering sector in the United Kingdom found very different treatment for labour employed by subcontractors compared to those who were employed by the main contractor (Gyi et al., 1999). Seven of the nine companies undertook pre-employment medicals for their own employees (usually white-collar workers) but only one did for the workers of its subcontractors (mostly operatives). Six of the companies monitored the health of their own employees but only two did so for the employees of their subcontractors, and then only on very large projects. Only one major contractor held the view that it was responsible for labour employed by subcontractors.

The health and safety record in developing countries is undoubtedly very much worse. In Malaysia accidents on construction sites are so common that everyone has come to accept them as an unavoidable feature of the industry. This situation is attributed to the casual terms of employment, the engagement of illegal foreign workers and the non-coverage of workers under the national insurance scheme. In a survey of site operatives, only 14 per cent of foreign workers directly expressed dissatisfaction with work safety, but a much higher proportion was dissatisfied with lack of insurance cover (41 per cent), accident compensation (24 per cent) and medical cover (24 per cent), which indicates that occupational safety and health is a major concern for the workers themselves (Abdul-Aziz, 1995).

In the Philippines, the International Federation of Building and Wood Workers (IFBWW) monitored 24 construction accidents resulting in 32 fatalities in 1997 and 40 fatalities in 1998. They found that lack of formal training is a factor in the poor safety record of the industry, with unskilled workers more prone to occupational accidents (Yuson, 2001). The presence of foreign firms has led to some improvement in safety standards amongst some of the larger local firms, although with 70 per cent of workers employed in small firms this has had limited impact.

There is also much concern among representatives of both workers and employers about the high rate of accidents in Brazil. The employers' organization for the state of São Paulo compiled data on accidents at work in 1997 and calculated that the cost of time lost

² The increase in accidents may be partially explained by boom conditions in the industry in the late 1990s. On the other hand, laws have been tightened up and there has been more rigorous labour inspection, with construction having more than half of the labour inspectorate's visits in 1999 (Byrne and van der Meer, 2000).

through accidents in that year was equivalent to the cost of 24,000 tons of cement (SindusCon-SP, no date). The recent steep increase in the number of deaths on building sites in the state of Rio de Janeiro is attributed to the lack of preventive measures and informal sector subcontracting. In Brazil, as elsewhere, accidents tend to happen to young and inexperienced workers who have not been trained.

In Poland the dramatic privatization of construction and subsequent pressures to cut costs had a big impact on safety in the industry. Here also the highest rate of accidents occurred amongst those with the shortest period of service. In 1999, 43 per cent of accidents involved workers who had been in their jobs for less than one year, compared with 25 per cent of accidents amongst this group before 1990. The image of construction work in the country does not appear to have improved with the opening up of the Polish economy to the world. The high accident rate is attributed to the fact that private employers pay insufficient attention to suitable protection and do not verify the professional skills of the workers (Sochacki, 2001).

These examples point to a link between employment practices and the number of accidents. The outsourcing of labour is associated with high rates of labour turnover and low levels of training (see next section) and both factors increase the risk of accidents. Labour subcontracting also means that responsibility for health and safety is diffused, hampering compliance with regulations, while the proliferation of small enterprises makes the enforcement of regulations pertaining to health and safety (as well as other labour legislation) much more difficult. In most developed countries and many developing ones, there is adequate legislation in place to ensure that construction workers are safe. The problem is a lack of implementation. Sites are not inspected and penalties are not imposed. The decline in union membership and the erosion of labour rights have also weakened the ability of workers to refuse to work in unsafe conditions – which is one of the key principles of the ILO Safety and Health in Construction Convention, 1988 (No. 167).

Health

In addition to concerns over safety there are worries about the health of construction workers. The main occupational health problems in the construction industry are back injuries from carrying heavy loads, respiratory disease from inhaling dust, musculoskeletal disorders, noise-induced hearing loss and skin problems. There is a very serious risk of cancer from the handling of asbestos, a problem which is only beginning to be tackled in some countries. Workers employed by subcontractors and other intermediaries are generally less aware of these risks, and less able to combat them, than employees in larger firms.

An added problem in many developing countries is the poor state of site accommodation and services. It is common practice for contractors to provide housing on site for construction workers, particularly when they are migrants from the countryside or from overseas. In some countries, living conditions have deteriorated as subcontractors offer worse conditions than principal employers.

In China's rapidly growing cities, where the bulk of the construction workforce consists of labourers from rural areas, the Government requires that accommodation and other facilities be made available on site. However, there are many sites where living conditions are not satisfactory. Huts are dirty and overcrowded, prone to mosquitoes, rats and other pests. They are neither well ventilated in hot weather nor well heated in cold weather. There are no proper places for workmen to have their meals and they are often found eating outdoors, exposed to dust in the air, without dining tables or seats (Lu and Fox, 2001).

In Malaysia, where an estimated 82 per cent of foreign workers live on the building sites where they are working, the poor quality of accommodation (*kongsi*) was the second major grievance (after social security) of construction workers interviewed in 1996 (Abdul-Aziz, 2001). Overcrowding, crude sanitation, uncontrolled surface water drainage and poor rubbish disposal are typical of many *kongsi*. Water-logged *kongsi* led to outbreaks of dengue fever in 1996 and 1997. In 1994 three Indonesian construction workers lost their lives when a *kongsi* collapsed (Abdul-Aziz, 1995), an event which drew the Government's attention to the issue. But, despite many promises, so far no action has been taken against contractors who provide substandard accommodation of this kind.

In India the on-site accommodation provided for workers is also rudimentary, comprising simple shacks with no running water or sanitation and poor ventilation. Women fair far worse, with no separate facilities, even though these are required by law. Accommodation on most sites is clearly (and very visibly) not up to the stipulated standards, yet nothing is done about it (Vaid, 1999).

Tightening up on regulations could in fact backfire. In Brazil, tighter controls over the standard of site accommodation have resulted in contractors housing their workers in even lower standard accommodation off site.

3.4. The impact on training and skill formation

In most developing countries construction skills are still mainly acquired through an informal apprenticeship system. In the Philippines, an estimated 95 per cent of construction workers acquire their skills in this way (Yuson, 2001). In Egypt 85 per cent of craftsmen are trained through traditional apprenticeships (Assaad, 1993), and a similar situation prevails in Brazil, India, Kenya and Mexico. Vocational training schools do exist in most countries, but many workers and contractors see formal training as an unnecessary expense rather than an investment. They can only be persuaded to undergo training if they are paid for lost time.

However, informal training has limitations, notably a restricted learning opportunity (learning by doing), a narrow and static range of skills and the difficulty of instruction in new techniques. In many African countries the informal apprenticeship system is not well developed and the master craftsmen who do the training may themselves have very limited skills. Another problem, noted in Malaysia, is that the passing on of skills through informal apprenticeship is often kept within the family, clan or tribe, and when circumstances dictate that skills should be transferred to "outsiders" there may be some dilution, with not all of the skills passed on (Abdul-Aziz, 2001). Singapore experienced such a dilution of skills as the original *kepalas*, who were immigrants from China with considerable skill, were replaced by more recent immigrants with little or no previous experience of work in construction (Debrah and Ofori, 1997).

The informal method of skill acquisition can come under particular strain when there is a sudden and/or sustained increase in construction activity, or when there is pressure from clients for better quality buildings or more rapid completion. These situations commonly arise during the process of economic growth and social change, as economies industrialize and incomes begin to rise, such as is now happening in the newly industrializing countries.

For example, in Malaysia pressure from clients for rapid completion is straining the traditional informal training system. Skill shortages first appeared in the early 1980s and then again in the construction boom of 1988 to 1997 (Abdul-Aziz, 2001). In India, the

scarcity of skilled workers in the face of increased demand for them has led to a situation where the big contractors are now thinking of investing in training and the newly formed Construction Industry Development Council has taken up training as a priority area (Vaid, 1999). In Brazil and in Trinidad the demand from clients for higher quality building is also causing concern amongst contractors about lack of skills and leading to a new interest in training. In the Philippines, there is an influx of foreign contractors who are setting higher quality standards (with many high-rise buildings) which means that local contractors may have no choice but to raise their standards and quality of work (Yuson, 2001).

However, the high turnover of workers poses a considerable barrier to formal training in the construction industry. Workers are reluctant to invest in their own training because of insecurity of employment and high levels of unemployment; contractors are reluctant to invest because there is a good chance they will lose trained workers to other firms (or other countries). The contractors' reluctance is also based on the fact that training costs money, which (at least in the short run) will raise the price of their bids and could make them uncompetitive. The cyclical pattern of construction output adds to the problem – nobody wants to train in a recession and nobody has time to train in a boom. A further difficulty is that the majority of owners (clients) build only once, which means that they will not contribute to training costs that will benefit only future owners (Philips, 2000).

These obstacles to training can be overcome by joint action. Collective agreements between the social partners that all will share in training can ensure that all contractors put training costs into their bids and so avoid “free rider” problems. Most developed countries, and some developing ones, have introduced such schemes, and others (e.g. the Philippines) are now attempting to do so. The schemes are usually funded through a levy on employers that can subsequently be reclaimed (a grant/levy system).

However, the development of new training schemes based on collective action is being hampered, and existing schemes undermined, by declining union density, the weakening of collective bargaining and/or the shift towards subcontracting. For example, in Brazil funds for training are raised through a 1-2 per cent tax on the payroll, part of which is channelled from the government training agency through a contract with the employers' organization to provide training. But with the dramatic fall in the number of registered workers the funds for training have decreased, while the increased use of subcontractors has made it more difficult for workers to attend classes. The training is mostly provided in the evening in local schools, which are spread around the country and far from construction sites. The employers' organization in São Paulo complains that these training funds are meeting the needs of local communities rather than those of the construction industry. There is also provision for literacy training, but the high mobility of labour and long journeys to work make it difficult to organize literacy or any other kind of training.

In Mexico, and also in Kenya, employers have cooperated to fund joint training schemes financed by a levy on turnover (0.2 per cent and 0.25 per cent respectively). But in both countries the declining share of registered contractors in total output and employment has reduced the scope and effectiveness of these schemes. In Kenya, the construction industry levy account (in the Directorate of Industrial Training) had accumulated a credit balance of more than US\$850,000 by the end of 1997. The failure to spend the funds accumulated for training is attributed to the reluctance of the main contractors to train and the exclusion of subcontractors (most of whom are unregistered) from the scheme (Njeri Wachira, 2001).

The problem is even more apparent in a number of industrialized countries, where joint training schemes had been well established. For example, in the United States there were many collectively bargained training schemes operated by trade unions and

employers at the local level (Philips, 2000). Apprenticeship training was funded by a levy of 25 cents to \$1 on each hour of work done by each employee. The costs were passed on to owners in the tender, as part of the collectively bargained labour rate. Employers contributed knowing that all would do the same. However, the rise of the open shop and the fall in union membership led to a dramatic decline in apprenticeships and to the “poaching” of labour (Allen, 1994; Philips, 2000).

In several other countries, where training is based on collective agreement among the social partners, there is clear evidence that the growth of labour-only subcontracting and self-employment has undermined workplace training. Finding work placements in training schemes is a major problem in the United Kingdom where the number of apprentices registered with the Construction Industry Training Board (CITB) fell from 8,700 in 1985 to 2,500 in 1994 (Bowen, 1996). As large general contractors have given up the direct employment of labour, they have abandoned their responsibility for training, thereby distancing themselves from the skill needs of the construction process. The subcontractors who are now the real employers of labour are small or very small firms, with more limited organizational and technical capacity and lacking the time and resources to invest in human capital development. Research into specialist companies’ training needs found that 80 per cent had done no training in the past five years and did not envisage doing any in the next three. When asked the reasons, 60 per cent said they did not need to train and 25 per cent said they did not have time to train (Bowen, 1996).

A further problem that has been noted in Spain, the United Kingdom and a number of other countries is a narrowing of skill development, as the heightened division of labour into ever more specialized trades, which is implicit in subcontracting, limits the range of skills that can be acquired in any one enterprise. This means that all-round craftsmen and general supervisory workers are very difficult to train. In many countries the public sector used to provide stable employment and a good training ground, but its role in training has diminished as public sector units have been disbanded.

Skill deficits appeared in many developed countries in the 1990s owing to the undermining of training. Skill shortages are seen as a problem in the European Union (DG Enterprise, 2000), in Switzerland (Baumann, 2000), in Canada and the United States (*ENR*, 2000c) and in many other countries. The problem is particularly acute in the United States, where 35 per cent of contract managers interviewed in 1999 predicted that skill shortages would be the main risk area for construction in the future (*ENR*, 1999a).

It may be concluded that in both developed and developing countries the change in the employment relationship in the construction industry has raised the barriers to training and also led to problems in implementing joint training schemes. Clearly, a way has to be found of involving subcontractors and labour intermediaries (*mistris, jamadars, maestros, fundis*) in training programmes if current skill shortages are to be overcome and the general level of skill is to be raised.

3.5. Some implications of skill shortages

Skill shortages make it difficult for contractors to deliver the quality of products that more discerning customers require. This is an obvious problem in many developed countries and a growing problem in developing countries, particularly those with a significant group of middle- and upper-class clients.

A shortage of skilled labour (or sometimes simply a shortage of labour) is also a factor behind the drive in many countries to mechanize production in order to raise productivity by replacing labour with machines. In many developed countries, there has

been a shift in recent decades away from traditional craft methods of building “in situ”, to the production of components in factories and their subsequent assembly on site. There has also been a move towards a greater use of plant and machinery in building and in civil engineering. For example, the skill shortage in the United States led to an increase in prefabrication, which accounted for 31 per cent of new homes in 1998 compared with only 23 per cent in 1989 (*Business and Industry*, 2000).

The move to mechanization and prefabrication makes sense in economies where full employment is creating upward pressure on wages, a situation found in Singapore and other East Asian countries prior to 1997 (ILO, 1995). But where there is surplus labour and high unemployment, as is the case in the majority of developing countries, the adoption of more capital-intensive methods seldom makes economic sense and it certainly does not make any sense in social terms. Quite the opposite is the case: employment in construction (as well as in other sectors) needs to be expanded as much as possible in low-income countries to help absorb the growing labour force and lift people out of poverty. This is recognized, for example, in Brazil where off-site prefabrication has been tried, but not considered to be widely appropriate because of higher costs and fewer employment opportunities.

Even in developed countries, increased mechanization and prefabrication does not provide a real alternative to raising the level of skills. This is partly because there are limits to the extent to which labour can be replaced by machines and also because new technologies require new skills and can fail if there is inadequate training (Gann and Senker, 1998). A recent survey of contractors in the United Kingdom indicates that they do not see this as a real solution to skill shortages (Mackenzie et al., 2000).

The importation of skilled workers is generally regarded as a more appropriate short-term solution to the skills crisis. Some contractors in the United States, mainly in border states (for example, Texas) are now recruiting skilled labour from overseas. In 1999 non-citizens made up 13 per cent of the workforce in the open shop and 5 per cent in the union shop (Philips, 2000).

Another alternative that is currently being promoted as a solution to the problem of labour and skill shortages arising from the reluctance of young men to enter the industry, is to recruit more women. In the United Kingdom, for example, there are currently targets to raise the recruitment of women (currently standing at 1 per cent) to help cope with an anticipated shortfall of new entrants. However, a survey of major employers (Mackenzie et al., 2000) revealed a high level of scepticism about the recruitment of women as a solution to the crisis. This scepticism is supported by recent research comparing the career profiles of male and female construction professionals in the United Kingdom, in which it was found that the construction workplace is a competitive and conflictual environment where women are overtly and covertly discriminated against by men, who use structural systems to undermine their participation. The women interviewed were found to have dealt with these barriers in a way which perpetuated existing work cultures, suggesting a self-fulfilling cycle of women’s continued under-achievement. The findings led to the conclusion that women should not be attracted to the industry unless steps are taken to moderate its exclusionary and discriminatory culture (Dainty et al., 2000).

Similar findings of overt and covert discrimination are reported from the United States, this time at the level of the building trades rather than the professions (Eisenberg, 1998). In 1978, an affirmative action initiative under the Carter Administration set out goals and timetables for greater female participation in the construction workforce, using the public sector to lead the way. New regulations established that women should make up between one-fifth and one-quarter of each apprentice class, and goals and timetables for hiring women on federally funded projects were set out. It was envisaged that by the turn

of the millennium the construction workforce would be one-quarter female. However, this has not happened. Despite a big increase in female apprentices, and many examples of skilled and productive tradeswomen who are well able to perform all of the tasks traditionally done by men, women's participation in the construction workforce has remained at around 2 per cent. The culture and the workforce composition of this traditionally male industry have remained intact.

In an attempt to find out why this should be the case Susan Eisenberg, herself one of the pioneers, gathered oral histories of 30 tradeswomen from ten states. The stories make depressing reading. When the author tried to get into an apprenticeship programme with the electricians' union, she was told "The unions don't want you, the contractors don't want you. We'll call you if we need you" (Eisenberg, 1998, page 21). But gaining admission to a training programme was only the first of many hurdles to be overcome. Getting a job was even more difficult, and as most jobs in construction are temporary the problem had to be faced over and over again. Resistance to employing women, and continual harassment from fellow workers, meant that only those who were very determined survived. One woman reports how when she was recruited to a site at a power plant, three male workers handed in their notice. A fourth said he could not leave because he needed the money, so he would work with her. But he refused to talk to her, have coffee or eat lunch with her. For three weeks nobody but the general foreman spoke to her. If she sat down with them the men would move away (ibid.).

A similar situation is reported from India, where it is rare to find women in the building professions (except architecture). In a survey designed to find out why this is so, one government engineer summarized the situation as follows:

Construction is the worst model of patriarchal culture. The contractor, the gang leader, the *mistry* (foreman) all believe in male domination. But why talk of contractors only! I know so many engineers – chief engineers – who will do their worst to make sure that a competent woman in the organization is pulled down and made to quit. These engineers don't mind women clerks and typists but a woman engineer is an anachronism to them (NICMAR, 1996, page 6).

These views were echoed by the director of a construction training institute who employed three women lecturers. He spoke of "concerted efforts made by men to pull down women, show disrespect for their views and by loose talk" (ibid).

3.6. Conclusion

It may be concluded that the widespread trend towards the adoption of flexible employment practices in the construction industry in those countries (mainly the industrialized countries) where the construction workforce had been stabilized, has undermined collective action, eroded workers' security, contributed to the high rate of accidents in the industry and reduced the effectiveness of training provision. In those countries where flexible labour has always predominated, the employment relationship continues to inhibit the development of collective action to address the problems of the industry, and impedes the realization of basic labour rights. The final chapter will examine possible solutions.

4. The way forward

4.1. Labour subcontracting will continue

The previous chapters have shown that the construction industry in most countries at the beginning of the twenty-first century has become highly fragmented. There are fewer large enterprises and many more small ones, as general contractors have shed their labour force in favour of outsourcing. The implications for the security, health, safety and skill formation of the workers have been serious. The image of work in the industry has suffered to the point where it is often difficult to attract new recruits, while the shortage of skills is threatening the quality of the products and possibly also, in the long term, the quantity of employment.

The big issue facing the sector is how to raise the image of the industry and make work in construction more attractive to young people. This is not just a question of finding a good public relations consultant. There are real issues here that have to be addressed.

In terms of the ILO's four strategic objectives, the industry has been examined and found wanting in the following areas:

- *Rights at work*

Basic labour rights (as embodied in core labour standards) are widely flouted in the construction industry. In many countries construction workers are excluded by law from joining trade unions because of their temporary employment status, because they are self-employed, or because they are foreign. Discrimination between men and women, local and foreign workers, and temporary and permanent workers in their terms and conditions of employment is widespread in both developing and developed countries

- *Social protection*

Temporary employment status means that the majority of construction workers enjoy little or no social protection (income security or social security). Construction workers are also at serious risk of exposure to unsafe and unhealthy working conditions.

- *Social dialogue*

Social dialogue in the construction sector is hampered by fragmentation of the industry and weak workers' and employers' organizations.

- *Employment*

The construction sector is providing employment for some of the most disadvantaged sections of society, and could even increase employment opportunities in low-wage countries, where there are few alternatives. However, the quality of work in the industry is not good and lack of skill could pose a threat to employment in the future.

The identified problems are of course interrelated. As many of them stem from the prevailing employment relationship in the industry, some would argue that the pendulum has swung too far in favour of flexible labour and that a solution can only be found in the stabilization of a greater proportion of the labour force.

In some European countries there are attempts to limit the extent of subcontracting. The trade unions in Spain have presented a Popular Legal Initiative (*Iniciativa Legislativa Popular* or *ILP*) with more than 500,000 signatures. General strikes organized in support of this action won massive support. If the bill were approved, it would prohibit chain subcontracting, limit subcontracting to the specialist trades not covered by the main contractor, ensure that 30 per cent of workers on all sites are employed by the main contractor, oblige subcontractors working for the State to employ at least 30 per cent of permanent workers, and establish a register and tighter control of firms working as subcontractors for the State (Byrne and van der Meer, 2000). This is a call from the unions for a change in the law with clear implications for the productive structure and employment practices of the industry. Perhaps not surprisingly employers are opposed to it. So, at the moment, is the Government; the Congress threw out the initiative in November 2000 (Byrne, 2000). To date the Government has ignored public pressure for change (IFBWW, 2001).

Some limited return to direct employment is possible in some countries, but it is not imminent or expected to be extensive. The case for the use of subcontracted labour in construction is simply too compelling.

A recent review of the literature on outsourcing in the construction industry in Singapore (where there is a serious shortage of local labour) concluded that the desire of employers to maintain flexibility in the use of labour is strong irrespective of the state of the economy or of the labour market. Neither a labour shortage nor a surplus pushes construction employers to develop a direct labour system (Debrah and Ofori, 1997).

These findings are echoed elsewhere. None of the nine country case studies of “contract labour”, in construction and other sectors, that were commissioned by the Programme for Workers’ Activities of the ILO in the mid-1990s suggested that this method of recruiting labour should be prohibited. Instead it was concluded that “This form of labour market intermediation seems set to expand and banning it would prove both impractical and counterproductive” (Egger, 1997, page 12).

Further support for this argument comes from the Government of South Africa, which notes in a recent White Paper on restructuring the construction industry that “labour-only subcontracting is an entrenched component of industry organization, both in South Africa and internationally. Its function in the project-specific environment of the contracting business is not in dispute” (Department of Public Works, 1999, page 18).

And by an expert on the construction industry in India: “It is doubtful whether methodologies of execution of construction contracts will ever change. Contracting and contract labour is going to be around” (Vaid, 1999, page 25).

A sensible starting point in mapping out a way forward would therefore seem to be to accept the employment of labour through subcontractors because of the flexibility it offers in terms of labour supply, while trying to ensure that temporary workers enjoy the same level of labour rights, social protection and access to training as are enjoyed by permanent workers (Egger, 1997). This is the position adopted in the report. The key issue then becomes how to improve the quality of employment (and the image of the industry) and meet future skill requirements in an increasingly casualized industry.

4.2. Priority areas for action which are of interest to both employers and workers

Some of the problems facing the construction industry, particularly in developing countries, have deep roots in history, culture or economic circumstances and are clearly beyond the scope of the industry alone to solve. For example, the construction industry can do little to prevent economic slowdown, to alleviate the extreme poverty that is found in much of the world, or the poor quality of primary education and low level of literacy in many countries.

The emphasis here is on those problems that are amenable to alleviation or solution by the social partners in the construction industry. The fact that problems are being solved in some countries, even very poor countries, is taken as evidence that they are indeed susceptible to solution, and could be solved in other countries also. The section will therefore highlight some “good practices” drawn from around the globe.

4.2.1. New role for trade unions and other pressure groups

Organization amongst construction workers for collective action, as well as being a fundamental right, is also important in making progress towards other goals.

The need to embrace casual and temporary workers and all those with non-standard forms of employment is recognized by the trade union movement. In the construction sector the drive to “organize the unorganized” arises out of necessity, as the traditional base and membership in the formal sector has dwindled or disappeared. Falling membership leads to loss of political influence and financial base. Trade unions risk becoming elitist if they choose to remain focused on the shrinking pool of workers who are directly employed (Yu, 1999).

Some employers’ organizations recognize that they too can benefit by having an organized workforce. For example, the Singapore Contractors Association has recently cooperated in a union membership drive, believing that a unionized workforce would lead to improvements in the welfare of construction workers and help to raise the poor image of work in the industry. They would also prefer to deal with an organized workforce than one which is disorganized and lacking in discipline (Thong, 1996, cited in Debrah and Ofori, 1997).

In some countries there are legal restrictions on the right of sections of the workforce (temporary workers, foreign workers, or the self-employed) to organize. In these cases, trade unions can – and do – campaign for their removal. For example, in the United States, the AFL-CIO recently began a drive to unionize temporary workers across the country. At the same time a group of liberal lawmakers introduced legislation designed to protect the rights of “permatemps”. These and other pressures led the National Labor Relations Board to partially overturn the Greenhoot rule of 1973, which effectively prohibited temporary workers from joining trade unions, with significant implications for the construction sector (*Wall Street Journal*, 2000b).

However, in many cases the law only restricts trade union membership for the purpose of collective bargaining (for example to situations where there is a clear employer-employee relationship). This does not prevent workers from organizing themselves for other purposes, into craft unions, cooperatives, mutual aid associations, etc. Several labour organizations in the Philippines have been organizing workers into craft unions and industry alliances. In other countries organizations may already exist at grass-roots level,

with which the trade unions movement can link up. In the Republic of Korea, where the Government suppressed trade union activity for many years in the interest of economic growth, construction workers began to organize after 1987 on the basis of mutual aid and friendly societies that already existed at local level. Recruitment was at construction sites in industrial complexes and through the daily manpower markets in urban areas (Yoon and Kang, 2000).

It is certainly not common in developing countries for trade unions to enter into collective wage bargaining with employers. Almost everywhere collective bargaining over wages is today less important than it used to be. But as trade unions lose their old roles, new roles are emerging. In several countries construction unions are operating employment agencies (sometimes for both union and non-union labour). Construction workers in Egypt would like a union to help them to resolve disputes with clients, to locate jobs, to certify skills and to provide some kind of unemployment insurance scheme (Assaad, 1993). In India, it is suggested that unions should also get involved in establishing labour cooperatives, especially for women, which is seen as one way for women to break through the barriers to skilled work (Vaid, 1999). In Brazil, trade unions have joined with contractors to set up housing cooperatives for their own workers, which is an important way of raising output and employment during periods of recession (Pozzi de Castro, 2001). Trade unions everywhere are also playing a big role in workers' education.

This broader role is demonstrated in the case of the Philippines, where two major union groupings, the Federation of Free Workers (FFW) and the Alliance of Progressive Labour (APL), have both been striving to embrace all working people, including hitherto excluded groups. This new approach, which calls itself "social movement unionism", is identified as a multiform labour centre that accommodates registered unions, area or industry-based alliances, community and trade associations, and working women's organizations. To provide a legal framework for "multiform unionism" the APL has actively supported legislation that provides for the registration of workers' associations with the Department of Labor. A workers' association is defined as any association of workers organized for the mutual aid and protection of its members or for any legitimate purpose other than collective bargaining.

With this legal backing, the International Federation of Building and Wood Workers (IFBWW) and its local partners in the Philippines have organized five community-based associations of construction workers. These associations have launched various initiatives, including project identification, skills training, safety orientation, rental of safety equipment, mutual aid schemes and job facilitation. The payment of dues is linked to the provision of the services, some of which are self-financing. Union dues (and insurance premiums) are only required to be paid when workers are in work and the IFBWW is increasingly finding ways to seek counterpart funds from employers (Yu, 1999).

In many other countries, trade unions are focusing attention on securing positive improvements for all in the industry, sometimes in collaboration with the other social partners. For example, in Canada there have been joint initiatives with employers in various provinces to raise the level of safety, quality or productivity in the construction sector to "world class". These have included schemes such as ERIC (Effective Reading in Context – illiteracy and innumeracy initiative), a world-class construction supervisor training programme, world-class safety programmes, model drug and alcohol programmes and aboriginal employment programmes. These developments have been described as a coming of age or maturing of the business/labour relationship that was not evident 25 years ago (Bob Blakely, personal communication).

While trade unions are adopting new roles, new organizations are joining in the traditional trade union role of agitating for construction workers' rights. In India, the

National Campaign Committee on Central Legislation for Construction Labour (NCC-CL) has been campaigning since the mid-1980s to procure better legislation to protect construction workers. The NCC-CL is a common platform of trade unions and other organizations working with construction workers and is led by a former judge of the Supreme Court of India, as well as senior retired officials of the labour ministry. Ten years of intense campaigning eventually led to the passing of a series of ordinances in 1995, followed by central legislation in 1996, and rules for implementation in 1998 – all relating specifically to construction labour. They provide for the setting up of construction labour boards (CLBs) at state level to regulate employment, supervise working conditions and provide welfare and training to workers. Direction is given to state governments to levy a welfare cess or tax on construction works to finance the boards, and to appoint safety officers on construction sites. To date only two states have implemented the legislation – Kerala and Tamil Nadu – both of which already had similar or better provisions for construction workers. The NCC-CL is currently continuing its campaign for the implementation of the central acts in the other states – and for amendments to be made to the central acts in areas where they are found wanting (Vaid, 1999; Subhash Bhatnagar, personal communication).

4.2.2. Flexibility with worker protection: Extension of social security to all

One of the issues of most concern to construction workers throughout the world is the insecurity of income that comes with temporary status. Providing adequate insurance against periods of sickness or unemployment, as well as medical and retirement benefits, is of critical importance in attracting and retaining workers in the industry. Where there are state insurance schemes that apply to permanent workers (as is the case in most developed countries) then attempts can be made to extend them to all workers. But in many countries a new approach may be required, with schemes specifically tailored to the needs of construction workers.

In Australia, unions in the construction industry have responded to the prevalence of short-term employment by developing collective industry agreements at the state level for portable benefits systems. These schemes allow construction workers to accrue benefits on the basis of length of service in the industry, rather than with a specific firm. The first portable benefit, long-service leave, was established in 1977 and is supported by state legislation throughout Australia. It provides for 13 weeks' paid leave after ten years of service. Initially, employers paid into the fund, but in some states the scheme is now fully self-funding. The second portable benefit to be introduced (in 1984) was superannuation. This was the first industry-based portable superannuation scheme in Australia but the idea has since spread to all industries and contributions are now compulsory for all employers. Superannuation was followed by a portable redundancy scheme and eventually (in 1997) a scheme for portable sick leave. All payments are made into a central fund which is managed jointly by employer and union representatives. The fund now supports other services to the industry, including training, counselling and research on industry-specific issues. This range of portable benefits is believed to be unique in Australia (Underhill, 2000). Canada has developed similar schemes (Joe Maloney, personal communication).

Most of the countries of Western Europe have also set up “social funds”, based on collective agreement between the social partners, for the provision of benefits to construction workers. These schemes mostly date from the Second World War and usually began with coverage for bad weather, gradually extending to other areas such as holiday pay and payments to supplement the benefits paid by the State for sickness, unemployment, retirement, etc. Although they have been weakened in some countries, these schemes still cover millions of construction workers in Europe, helping to make the industry more attractive as a place to work and also more productive (Clarke, 2000).

Attempts to provide at least some of these benefits to construction workers are also being made in some developing countries.

As long ago as 1982 the Egyptian Government devised a special ministerial decree to deal with the social security needs of casual construction workers. Under this decree temporary workers in the private sector can receive benefits if they pay a monthly contribution to the social security administration. The employers' contribution is collected as a standard 2.5 per cent deduction on the gross value of a construction contract, paid at the point of applying for a building permit. However, there was a problem with this scheme in that workers could only claim benefits if they got the signature and tax file number of all of the employers they worked for or the numbers of the social security files on the building permits for all of the buildings worked on. Unfortunately, few casual construction workers were able to claim benefits because the small subcontractors for whom they work are often not registered for tax and refuse to sign the cards, and also because a large proportion of buildings (75 per cent of all houses) are built without permits. Consequently, funds were building up in the construction workers' account (Assaad, 1993). The construction trade union was trying to get the administration to amend the rules so that construction workers would no longer need the signature and tax file number of their employers to qualify for benefits. It is not known if this attempt was successful.

The Government of the Republic of Korea has also recognized the special needs of construction workers, introducing a law in 1996 (Employment Improvement of Construction Workers) which is a mutual aid project for retirement allowances. The construction worker holds a welfare card to which the employer attaches a mutual aid stamp according to the number of days worked. A benefit association later pays a retirement allowance to the worker on the basis of the number of stamps. To date the effect of the retirement credit system is limited because it has been voluntary, except on very large government projects or large (over 500) housing schemes (Nam, 1997). But both this and the Egyptian scheme described in the previous paragraph serve to illustrate the direction in which policy has to move.

In India, insurance which covers compensation to workers in the event of injury at work is sometimes included in the contract. But this is not the case for insurance against sickness and medical expenses, or to cover workers against seasonal unemployment which occurs annually during the monsoon. The state insurance scheme does provide minimal medical costs but it does not cover casual construction labour. However, there are low-cost private schemes, contributions to which are tax deductible. Research by Vaid (1999) indicates that some contractors would be willing to buy policies for their workers (both those directly and indirectly employed). Many contractors also say that they would like to comply with the statutory Provident Fund scheme if administrative procedures were simplified.

However, in India state-level schemes specifically for construction workers might be a better way forward. Social security provision is an important part of the duties of the construction labour boards which are supposed to be established – on the basis of recent legislation – by the individual states. The way forward has been shown by the State of Kerala which has been operating a Construction Workers Welfare Board (CWWB) for many years, which is funded by a cess on all building works. The CWWB provides a range of benefits for its members, who include some casual as well as permanent workers. The extension of CWWB benefits to all casual workers is now under review. The Kerala state government is also committed to piloting a state-wide group insurance scheme to cover casual labourers who are involved in contracting works at community level but whose principal employment is not construction work (Jennings, 2001).

4.2.3. Promoting health and safety

The poor image of work in construction is in large part due to its appalling safety record. Ensuring that accident prevention strategies are adopted in a fragmented industry may be difficult but there are ways of tackling it.

In some countries the law needs to be updated to bring it into line with the provisions of the Safety and Health in Construction Convention, 1988 (No. 167), the most important of which are as follows:

- there should be cooperation between employers and workers in taking appropriate measures to ensure that workplaces are safe and without risk to health;
- all parties to a construction contract have responsibilities, including those who design and plan projects;
- the principal contractor is responsible for coordinating the prescribed measures and each employer is responsible for their application in respect of workers under his authority; and
- workers have the duty to report risks, but also the right to remove themselves from imminent and serious danger.

The Convention also prescribes an inspection service and adequate penalty measures (ILO, 1990).

Legislation in the European Union has gone further than ILO Convention No. 167 and has included the client as a stakeholder with duties and responsibilities. This is particularly important on the increasing number of sites where there is no general contractor but where the client is filling the role of the principal contractor, as is commonly the case today in many developing countries.

To date only 14 countries have ratified Convention No. 167, although 30 had ratified the earlier Safety Provisions (Building) Convention, 1937 (No. 62), which it replaced and many more have legislation in place that would allow for ratification. Adequate legislation is in fact in place in most countries which, if properly implemented, would ensure safe workplaces. The real problem lies not so much in weak legislation, but in the failure to implement the legislation that exists.

Policing by labour inspectors is the traditional means of enforcement (the stick approach). A few high-profile prosecutions (preferably involving prison for those found guilty) can attract a lot of publicity to the issue of health and safety and at the same time serve as an effective deterrent to the perpetuation of bad practice. In Malaysia the greatest weapon of the Department of Occupational Safety and Health (DOSH) is considered to be the “stop work order” on projects deemed unsafe. Officers of the DOSH indicate that main contractors quickly respond to safety advice when threatened with it (Abdul-Aziz, 2001).

But there are never enough inspectors to police even the big sites, let alone the increasing number of small sites. Corruption is a further problem in some countries. In many countries the role of labour inspectors is therefore changing to one of education and prevention, as opposed to inspection and prosecution. Research by the ILO in 25 (mainly developed) countries has found that almost everywhere there is a new emphasis in labour inspectorates on accident prevention, with the provision of information, advice and publications taking on a much more central role. Health and safety inspectorates are also working with the social partners, often at a sectoral level, to develop strategies and campaigns for accident reduction (ILO, 1998).

In the new strategies for labour inspection, large firms are increasingly expected to “police” themselves (in many cases with the help of quality norms and procedures identified with the ISO 9000 series). In some countries the mentoring of small enterprises by large ones is being encouraged so that small enterprises may gain from their more experienced partners. This can be particularly effective when there are contractual connections between enterprises, as occurs in construction. Many large enterprises today insist that their safety and health management principles are handed down through any chain of contracts to the small enterprises at the bottom of the contract chain. Those who do not conform to the standards risk permanent exclusion (ILO, 1998).

The role of labour inspectorates in informing and advising workers and employers in accident prevention is particularly important in the developing countries. The causes of most accidents (and ill health) in the construction industry are well known and easily preventable. It may therefore be argued that those in possession of this knowledge have a moral obligation to pass it on to the workers and employers in the industry worldwide. This is a role not only for labour inspectors but also for trade unions (workers’ education) and all involved in training programmes for the construction industry at all levels.

A number of countries are now experimenting with the use of safety cards. For example, the Construction Industry Development Board in Malaysia is pioneering a scheme to make every construction worker undergo a one-day safety and health induction course, after which he is issued with a “green card”. Those without the card would be barred from entering work sites while contractors who fail to send their workers to undergo the training have been threatened with blacklisting. Contractors undertaking major projects are also required to send their management staff to attend the same training scheme. A similar scheme is in operation in Singapore and in a number of developed countries (Australia, Ireland, United States, etc.). Safety can also be included in schemes for the certification of other skills (see below).

However, securing real improvement in occupational safety and health requires more than just advice and training. We cannot avoid the fact that some of the measures needed to make workplaces safe and healthy are expensive. There is an element of truth in the saying that “Good Health is Good Business” (the campaign slogan of the Health and Safety Executive of the United Kingdom), but it is not the whole truth. Employers, both large and small, operating in a competitive industry will be tempted to resist the implementation of costly measures whenever they can.

To meet this challenge, many insurance initiatives have been developed in the industrialized countries which offer financial incentives to encourage employers to implement accident prevention strategies. The most usual incentive is a lower annual premium if claims are reduced, or a surcharge on an excessively high level of claims. This system is said to work well in Switzerland, and in Germany where insurance is on a group basis with significant advice and support offered to employers from the insurance providers (ILO, 1998).

An alternative that might be more appropriate in developing countries (where insurance schemes are not well developed) is to take the costs of health and safety measures out of competition by including them in the prime costs of a competitively tendered contract. In some of the poorest countries, pilot studies are currently under way to explore whether the cost of providing safety clothing, clean water, etc., can be included in the prime costs on donor-funded contracts (DFID, 2001). The possibility of extending this approach to other donor-funded projects (including those financed by the World Bank) is under discussion.

4.2.4. Recent developments in training and skill formation

Training is fundamental to meeting the skill requirements of the construction industry. It is also an important factor in the realization of several other objectives, notably securing improvement in occupational safety and health (as discussed above) and improving wages and other terms on which labour is engaged. For example, research in India concluded that the only way to improve the wages and other terms of employment of construction workers is to give them an opportunity to acquire skills. Whereas unskilled workers are exploited, in current market conditions skilled workers can dictate their rates and terms of appointment (Vaid, 1999).

However, training must be demand-led. It must be “needed, wanted and feasible” (Fluitman, 1989). If the market does not demand and value skills, then there is a danger of trained people not finding work, or not finding adequate remuneration for the skills that they have acquired. They will then be lost to the industry and probably to the country as they migrate in search of better employment opportunities overseas. There is much evidence from around the world of formal training schemes which do not address the real needs of the industry and of the subsequent leakage of trained workers to other sectors.

Fragmentation of the construction labour market in many countries, particularly developing ones, is another reason why those who have received training sometimes cannot find work. Research in Egypt has shown that the construction labour market is highly structured. Graduates of formal training programmes lack the contacts needed to get jobs in the informal market once they complete their training. They either find work in the public sector or leave the industry altogether (Assaad, 1993). The labour market is similarly fragmented in India (van der Loop, 1992).

The implication is that for training to be relevant it should be both demand-led and directed towards the upgrading of the skills of those who are already in work, or with the promise of work. The apprenticeship system meets these requirements. Trade apprenticeship is the traditional way that the bulk of construction workers acquire their skills in all countries, both rich and poor.

In most developing countries apprenticeship is entirely informal, as a master craftsman instructs his “helpers” while at work. The system is self-sustaining, without outside intervention, with the cost of training borne by the trainee – through his labour or through a fee. Research in the Philippines has shown how the supply of skills keeps pace with the demand (albeit with a time lag) through the apprenticeship system, even in the context of the massive outflow of skilled labour for work overseas (Tan, 1987).

However, traditional apprentice training may fail to meet the requirements of the industry for a variety of reasons. Firstly, the quality of training is only as good as the skills of the master (Fluitman, 1989) and in some countries the master craftsmen themselves have only limited skills. Secondly, a big expansion in demand can strain the system by creating pressure to use apprentices for production, at the expense of training. The traditional system can also be found wanting if there is a demand for higher quality building or the introduction of new technologies requiring new skills. In any of these situations there may be a need to inject additional skills into the system or to streamline apprentice training to make it more efficient and/or enable it to expand.

There are several ways of doing this. One way is to train the trainers, the master craftsmen themselves. A recent project in Kenya set out to upgrade the skills of master craftsmen in the informal sector and strengthen their capacity to provide quality training. The project included, although was not confined to, construction craftsmen. Several

important lessons were learned, the most critical of which was that master craftsmen, or “host trainers”, were little interested in upgrading their technical skills unless this translated directly into an improvement in their income. This led to a change in the approach of the project towards a more participatory process of needs assessment and dialogue with prospective project clients. The project eventually designed and delivered 43 courses to 419 master craftsmen, as a result of which almost all of those involved increased their number of apprentices. A significant number also increased their income and employment (Grierson, 1998).

Another interesting way of supplementing skills acquired through the apprenticeship system, while at the same time ensuring that training is demand-led, is to issue target groups with “training vouchers” which they can spend as they please. This is demonstrated by another project in Kenya (the Micro and Small Enterprise Training and Technology Project, funded by the World Bank) which included a scheme to issue training vouchers to small and medium-sized enterprises (SMEs) in construction and other sectors. The vouchers could be used for any kind of training from a number of training providers, public and private, formal and informal, including master craftsmen. Again there were interesting findings. Vocational training institutes proved to be woefully inadequate in meeting the needs of SMEs. What the SMEs demanded was short, low-cost and practical courses that impart readily usable skills. By subsidizing the demand for training the project led to changes in the form, duration and content of training courses as well as the type of training provided. Some of the more successful master craftsmen turned training into their principal business (Riley and Steel, 2000).

The above schemes were subsidized as part of technical cooperation projects and therefore not sustainable in the long term unless the participants are willing to pay the full costs. However, for labour subcontractors and their employees the real costs of upgrading their skills – in terms of time lost from work – are high and the rewards uncertain. In developing countries apprentices already pay for their basic training. It is too much to expect that they, or their trainers, will be willing to bear the additional cost of skills upgrading in the current climate, given the prevalence of payment by results and the increasing uncertainty of obtaining future work.

The case for sharing these costs in an industry with high labour turnover is overwhelming. Industry-wide training schemes in which all participate can overcome the problem of poaching skilled workers from other enterprises. There are also other advantages, such as the development of training that fulfils the long-term needs of the sector, as opposed to the specific and short-term needs of any particular enterprise. They also allow enterprises which are good at training to specialize in it, taking on more apprentices than they require, with proper compensation (Clarke and Wall, 1998).

In virtually all developed countries, and an increasing number of developing ones, some sort of industrial levy is raised to pay for training on a joint basis. However, changes in the structure of employment in the industry have created some major problems. The first is financial. In many cases the levy is based on payroll (a flat charge per employee or a fixed percentage of total payroll costs) and is levied only on the general contractors. This means that the funds have diminished as main contractors have shed their labour. Basing the levy on a percentage of the value of contracts (which could be levied at the planning stage) would overcome the problem of a diminishing financial base. It would also eliminate the possibility of the levy serving as a further disincentive (along with other charges on labour) to direct employment in the industry.

The second and more intractable problem is that it is the subcontractors who are now the main employers of labour, but they are generally excluded from participation in these schemes. The effect is well illustrated by the experience of Singapore, where training

opportunities abound, courses are specifically designed to suit the needs of existing construction workers, and companies are encouraged and given incentives to upgrade their workers. However, under the *kepala* system, workers are seldom sponsored for training as they have no attachment to a general contracting firm and a *kepala* cannot sponsor them (Debrah and Ofori, 1997). A similar problem has been noted in Kenya where funds accumulated for training cannot be spent because the subcontractors are not eligible to send workers for training and the main contractors have no workers to send. In this situation the training funds are often spent on formal courses for head office staff, which was not the purpose for which they were originally intended. The involvement of subcontractors, labour subcontractors and intermediaries in joint training schemes, with full cost reimbursement, seems to be essential if these schemes are to be effective in meeting the real skill needs of the industry.

However, a further problem arises from the fact that subcontractors must not only be encouraged to sponsor their workers for training, they are also expected to provide workplace training themselves. Many subcontractors today are very reluctant to hire apprentices. Most are small or very small firms operating in an uncertain environment with insufficient time to supervise and administer apprenticeships. Temporary employment agencies also rarely hire apprentices. Almost everywhere the numbers in apprenticeship training are declining, a problem which is proving exceedingly difficult to overcome. In Australia it has been tackled by the establishment of a Building Industry Group (BIG) Training Scheme, under which apprentices are employed by BIG and allocated to employers on a temporary basis. This means that apprentices will work for a number of employers during their training period, which provides an opportunity for the development of a broader skill base. Nevertheless, the number of apprentices continues to decline (Underhill, 2000).

In other developed countries the problem has to some extent been overcome, or perhaps sidestepped, by an increase in the proportion of off-site and pre-employment training. Classroom training is supplemented in a variety of ways. In Germany joint training centres have been established, which are somewhere between the classroom and the site. In the Netherlands “trainee sites” are set up to provide trainees nearing the completion of their training with good quality work experience. In the United Kingdom further education colleges, which are now the main providers of construction training, try to simulate site conditions (Clarke and Wall, 1998).

Amongst European countries differences in the approach to training have been detected between those countries where the worker representatives are fully involved in the design of training provision and those countries where they are not (Clarke and Wall, 1998). The involvement of all the social partners in joint training schemes is very important in order to ensure that training will be relevant and that it meets not only the immediate needs of employers, but also the aspirations of workers. If new entrants are to be attracted to the industry in the developed countries they need to see that there are opportunities for lifelong learning and a career in construction.

These issues were recently brought to light in the United States, where there has been intense debate amongst various sections of the industry about the type of training that is required to rectify the current skill shortages. In the State of Florida, the homebuilders’ group favours narrowly focused short courses that would produce trained workers in six to eight weeks, while the state’s commercial contractors and trade unions are pushing to expand broad-based apprenticeship programmes stretching over four to five years. Both proposals are competing for state money. While the short courses may be needed in the current emergency situation, with an estimated shortfall of 11,000 workers, fears have been expressed that these courses will produce workers who are only marginally employable in the longer term. It is also feared that potential recruits will not be forthcoming. “[W]ith the

record low unemployment [in the United States, labour] shortages are a worry for businesses everywhere. But the construction industry has the added problem of a poor image among would-be workers” (*Wall Street Journal*, 2000a).

4.2.5. Skills testing and certification

Both employers and workers gain from the certification of skills, especially if safety training is incorporated into the certification process.

The link between skills certification and safety is illustrated by a recent campaign in the United States by two Wisconsin trade unions for legislation to create state-mandated certification and licensing programmes for crane operators and iron workers. As the journal reporting this event noted “Surely, no one would disagree that the person flying a 5-ton piece of steel over a populated jobsite should know what he or she is doing” (*ENR*, 2000a).

Also in the United States, the National Center for Construction Education and Research, an affiliate of the University of Florida, has developed new craft skill assessment tests in collaboration with two employers’ groups. The move is driven by building owners who believe that assessment increases safety, quality, productivity, cost-effectiveness and career advancement (*ENR*, 1999b).

In the United Kingdom there is evidence that the Construction Skills Certification Scheme (CSCS) is viewed by employers as the best approach to tackling the skills crisis (Mackenzie et al., 2000). The scheme was launched in 1995, is administered by the Construction Industry Training Board and has a management board comprising the main employers’ bodies and the trade unions. It provides a voluntary register of skills, competence and qualifications of individual workers. Although the scheme is currently voluntary, there is pressure on clients to set a deadline, after which they will allow only certified workers on their sites.

Amongst developing countries, skills certification was pioneered in Singapore but has recently been taken up by the Construction Industry Development Board (CIDB) in Malaysia. There are several categories of skill registered by the CIDB – skilled and semi-skilled workers, construction site supervisors and construction managers. Applicants have to prove their competence by submitting their relevant certificates or they can be tested on site. In certain trades (e.g. scaffolding) they may be obliged to undergo CIDB courses before registration. In other less developed countries, where many construction workers are illiterate, higher priority would have to be given to practical, as opposed to written, tests (Abdul-Aziz, 2001).

A variant on the testing and certification of individual skills is the certification and registration of subcontractors. Employers in Singapore set up a scheme in 1993 to register subcontractors, known as the Singapore List of Trade Subcontractors, or SLOTS. The objective was to improve their performance, as well as to help them to provide continuous employment and better welfare for their workers. The scheme subsequently received government support, with main contractors on public sector projects required since 1996 to engage only SLOTS-listed subcontractors (Debrah and Ofori, 1997).

Even without any formal registration scheme, contractors in many countries try to nurture good subcontractors. The mutual dependence between contractors and subcontractors is widely recognized and it is not uncommon to find continuous working relationships which can extend over many years. Similarly, subcontractors try to keep good workers on their payroll as long as possible. These arrangements, sometimes referred to as

“partnering”, can help to bring some stability to turbulent markets and help raise the level of skill and productivity in the industry.

4.3. Levers for change

The new approaches outlined above give an idea of the direction in which the construction industry needs to move if the twin objectives of improving the quality of employment and meeting future skill requirements are to be achieved. The remaining issue to consider is where the momentum for change is coming from.

In this global age, pressures from consumers, environmentalists and other groups in the industrialized countries are widely recognized as a lever for securing improvements in the conditions of work and the observance of labour rights in the developing countries. In the construction industry few such global pressures can be expected. Construction is not an internationally traded commodity. It is a service which is largely provided locally. Although there are international contractors, they account for only a small proportion of total world output and their activities are not generally of much concern to consumers in the developed world. Pressure from environmental groups over issues relating to construction projects is sometimes brought to bear, but the concern is generally for the impact on the local environment or on the people displaced by the project, rather than for those involved in the construction process. Throughout history more attention has been paid to those who design projects than to the workers who construct them.

In the absence of outside pressure, the construction industry must solve its own problems. There is ample evidence that it can do so. Solutions to construction industry problems must be sought primarily at the national and regional level. The fact that construction is not a globally traded commodity may actually be a benefit, as it also means that construction markets are to some extent protected from international competitive pressures. At national and regional level there is some room for manoeuvre.

The State of Kerala demonstrates this very clearly. Kerala is not substantially richer than the other states in India, but it is well ahead of them in providing for the basic rights and protection of construction workers. All construction workers in Kerala are free to join trade unions and union membership is strong, even among casual and temporary workers. The state has well-established construction labour boards, which are managed by tripartite bodies. All workers are covered by social security schemes. There are regulations governing minimum wages and working hours which are widely observed, and health and safety regulations that are observed at least on large projects. Kerala has also shown the way by ensuring that the children of construction workers have places in local schools, so that child labour is not a problem in the construction industry in the state (Jennings, 2001; Vaid, 1999).

The example of Kerala also demonstrates the importance of social dialogue in finding solutions to the problems of the industry and the people working in it – as do the many examples of good practice cited above. Social dialogue can and should take place at a variety of levels – international, national, regional, local and project level. At national level, it is often institutionalized through construction industry development boards (Malaysia, Singapore, South Africa) or construction industry councils (Botswana, Canada, South Africa, United Kingdom) which bring the stakeholders together on a regular basis. It is particularly important that all the stakeholders are involved, including representatives of contractors, subcontractors, workers and government, as well as the clients who are the owners and/or the funders of construction projects. Some of these groups may need assistance in how best to participate in the development of the industry.

The clients are particularly important stakeholders. As the customers of the construction industry they can exert considerable influence on the direction in which the industry is developing. This influence is enhanced when they act as a group. In many countries private clients are organized into groups and have used their enhanced power in recent years to force contractors to lower their costs and improve their delivery. Unfortunately, as we have seen, this has too often been at the expense of the workforce and of the investment in human capital required to ensure the long-term capacity to deliver high-quality construction.

The critical question now is whether a sufficient number of clients are sufficiently concerned about the situation to create serious pressure for reinvestment in the skills needed to guarantee the quality they have lost. It is interesting that clients in many of the developed countries are now insisting that contractors are able to offer quality assurance, through the ISO 9000 group of standards. But this does not seem to lead them to inquire about the skills (let alone the terms of employment) of the workforce. In many other parts of the world, the priority for the majority of clients is still, as it always has been, to obtain their building at the lowest possible cost, irrespective of the quality. It may be concluded that private clients are probably unlikely to spearhead any major change.

Greater leverage may be obtained from public sector clients, who have a longer term interest in the industry and a wider perspective. Although the government's role as client has diminished in many countries, it has not disappeared, and in many developing countries public sector bodies at central or local level are still responsible for much of the construction activity that takes place in the formal part of the industry. Governments can use their own projects to set an example to the rest of the industry. They can do this through their procurement strategies, for example by including clauses in contracts that ensure fair treatment of workers, technology transfer, employment generation, etc. Compliance with the terms and conditions of the contract has, of course, to be monitored. But there is an immediate sanction on those failing to comply, in that they can be cut off from future tender lists.

The South African Government is now proposing to act along these lines, requiring certain performance standards of contractors who tender for government projects. These include appropriate training programmes and programmes for the improvement of health and safety, productivity, quality and environmental protection (Department of Public Works, 1999). Public sector spending in South Africa still accounts for 42 per cent of total construction investment, mostly in civil engineering. Hence the Government can have an important influence on the terms and conditions of construction employment (van Huyssteen, 2001). Other countries in Africa which are in the process of revising their procurement guidelines could follow the example of South Africa.

International donors can support such actions in developing countries, where a high percentage of construction work in the public sector is funded by donors. At bilateral level the United Kingdom Department for International Development (DFID) has shown how basic labour rights can be observed on construction projects even in the poorest countries. It has also shown how the observance of these rights can be monitored by the social partners working together at the project level (DFID, 2001). A conference is planned for 2002 to disseminate these approaches to other donors.

The development banks, which are the biggest donors for infrastructure projects, could emulate the example set by the DFID and social dialogue at the international level could help to bring this about. Recently, the IFBWW and the Confederation of International Contractors Associations (CICA) met with representatives of the World Bank and the ILO to try to find a common understanding and a platform for future cooperation. Following the meeting, the CICA and the IFBWW issued a joint statement in which they

recognize that the World Bank and other international financial institutions are in a strategic position to promote socially and environmentally responsible business practices. The IFBWW and the CICA jointly asked the World Bank and regional development banks to reflect the ILO Declaration on Fundamental Principles and Rights at Work in their policies, as well as to enforce anti-corruption mechanisms.

This example of social dialogue at the global level represents a very significant breakthrough. It needs to be joined by similar actions at national, local and project level in order to make a real difference to the construction workers on the ground and the image of the industry worldwide.

5. Summary and suggested points for discussion

Summary

As we approached the end of the twentieth century, output from the construction industry worldwide was estimated at around \$3,000 billion per annum. The developing countries have increased their share of world output, from 10 per cent in 1965 to 23 per cent in 1998, but three-quarters of output, by value, is still generated in the industrialized countries, with only one-quarter originating in the developing countries.

The distribution of employment is almost the exact reverse of the distribution of output, with three-quarters of the world's estimated 111 million construction workers to be found in the developing countries and one-quarter in the industrialized countries. While employment has stabilized in many developed countries, it is still increasing in the developing ones.

Construction is a labour-intensive activity, with the capacity to provide extensive employment with very little investment. The industry provides a point of entry into the labour market for migrant workers from the countryside and it employs some of the least educated from the most disadvantaged sections of society. Construction is an "employment spinner" which can absorb the excluded. However, work in construction is not highly regarded and people work in the construction industry out of necessity rather than choice. Almost universally, construction workers wish for better things for their children.

The image of the industry in the eyes of workers, or potential workers, has declined dramatically in recent years as construction has led the way in the adoption of "flexible" labour practices. In many developing countries, the practice of recruiting labour through subcontractors and intermediaries is long established. But there is evidence from many countries that the proportion of workers employed through subcontractors and intermediaries, on temporary and casual terms, has increased in past decades while the permanent, directly employed workforce has declined.

In the majority of developed countries, the significant stabilization of the construction workforce, which was achieved in the boom years of the 1950s and 1960s, has been reversed. In some countries there has been a massive shedding of labour by contractors (and subcontractors) in favour of outsourcing. Non-standard forms of employment, involving recruitment through intermediaries (agency labour, "labour only" subcontracting and self-employment) on short-term contracts, have become common practice. The labour practices in some developed countries are now rapidly approaching those seen in developing countries.

These developments in the private sector have been accompanied by a fall in employment in the public sector. In many countries the role of the State both as a client of the construction industry and as a direct provider of construction services has diminished. Governments in one country after another have chosen, or been forced, to reduce or disband their construction workforces. The declining share of publicly funded construction is increasingly implemented by the private sector.

The growth in the practice of outsourcing of labour through subcontractors that has occurred throughout much of the world has allowed large construction companies (both public and private) to divorce themselves from the physical work of construction and

concentrate on management and coordination functions. In many countries, they have turned into service companies, finding clients and marketing products that are then produced by subcontractors. Some have expanded by taking responsibility for other service activities up and down the supply chain, while others have diversified away from their core business into other sectors. The top firms have moved into international markets, through mergers and acquisitions.

The large establishments may still be responsible, in some countries, for a significant share of output. But everywhere they employ a declining proportion of the workforce. The subcontractors and labour contractors who are now the main employers of the construction workforce are small, sometimes very small, firms.

Employment in small enterprises on casual and temporary terms, often through intermediaries (which is now the norm in the construction industry in much of the world) has a profound effect upon the construction workforce and their labour rights and upon skill formation in the construction industry.

Both trade unions and employers' organizations have been seriously weakened by the increased fragmentation of the industry and collective bargaining has been undermined almost everywhere. Collective agreements, where they exist, are applied to a small and decreasing proportion of the workforce, usually the diminishing core of directly employed workers.

For the bulk of the workforce on temporary contracts, wages are set by the market. Wide fluctuations in wages are common, in line with the cyclical (and sometimes seasonal) fluctuations in construction output and labour demand. In many developing countries, where there are more potential workers than jobs, earnings may be barely above subsistence. Piece-work is the predominant wage form in both developed and developing countries, and a 10-12 hour day, six days per week, is the norm.

The level of employment is also highly variable and long periods out of work are common. Despite this, it is not usual for employers to pay into social security funds on behalf of construction workers who are on temporary contracts. Hence the workers receive no protection against loss of pay in periods when they are unable to work due to unemployment, sickness, accident or old age. Neither do they receive any health care or holiday pay. In some countries this is because temporary workers are excluded from the provisions of labour legislation. In other cases regulations are in place covering temporary (contract) workers but there are problems of implementation.

Almost everywhere, the section of the industry that caters to individual house owners serves as a "safety net", a source of alternative employment for construction workers who cannot find work in the formal sector. There is evidence from many countries to indicate that workers move regularly between work in the "household" or "domestic" sector (often referred to as the informal sector) and project-based work in the formal sector. In some of the least developed countries in Africa the bulk of construction workers may be found in the "household" sector, which is expanding into new roles. What is happening in this part of the industry will have an impact on the terms of employment in the industry as a whole.

There is a link between recent changes in industrial structure and employment relationships and deteriorating conditions of occupational safety and health. The high turnover of labour increases the risk of accidents, while the prevalence of subcontracting means that responsibility for health and safety is diffused, hampering voluntary compliance with regulations. At the same time, the enforcement of regulations pertaining to health and safety (as well as other labour legislation) through inspection is made much more difficult by the proliferation of small enterprises. In most countries there is adequate

legislation in place to ensure that construction workers are safe. The problem is a lack of implementation. Sites are not inspected and penalties are not imposed.

In both developed and developing countries the changes in the employment relationship and the structure of the construction industry have also raised the barriers to training and led to problems in implementing joint training schemes. A way has to be found of involving subcontractors in training programmes if current skill shortages are to be overcome and the general level of skill is to be raised.

In sum, it may be concluded that the widespread adoption of “flexible” labour practices has undermined collective bargaining, eroded workers’ security, contributed to the high rate of accidents in the industry and reduced the effectiveness of training provision. It also impedes effective organization and inhibits the observance of basic labour rights. All of these factors contribute to the negative image of work in the construction industry.

Despite the negative implications, the report concludes that the trend towards labour subcontracting is unlikely to be dramatically reversed. The case for the use of subcontracted labour in construction is simply too compelling. It is therefore suggested that the practice should be accepted because of the flexibility it offers in terms of labour supply, but that attention should be focused on finding ways to ensure that temporary workers and workers employed by subcontractors enjoy the same level of labour rights, social protection and access to training as permanent and directly employed workers. Only if this is achieved will work in construction be more attractive to young people.

The final section presents examples of “good practice” drawn from around the world. It is clear from these examples that the way forward in finding solutions to current problems lies in social dialogue and collaboration amongst all of the “stakeholders” in the industry. There is evidence from a number of countries that a new spirit of cooperation is in fact emerging, with the social partners taking on new and less combative roles. There is a need to broaden representation on both the workers’ and employers’ side so that social dialogue is strengthened and new initiatives are implemented across a wider section of the industry.

There is little doubt that the construction industry can, through its own efforts, find solutions to the problems it is now facing. These solutions will be found primarily at national and local level. Governments have a particularly important role to play, both as major clients and as legislators. However, actors at the international level, in particular the donors who fund infrastructure projects in low-income countries, can lend their support.

Suggested points for discussion

The report has shown the need for cooperation amongst the social partners to raise the image of the construction industry and make work in construction more attractive to young people.

1. What can be done to foster social dialogue and collaborative initiatives between the social partners at national and international level (such as the recent agreement between the Confederation of International Contractors’ Associations (CICA) and the International Federation of Building and Wood Workers (IFBWW))? In particular:
 - How can governments be helped to remove restrictive legislation on the right to organize?

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- What assistance is needed by employers' and workers' organizations to extend their activities to embrace the subcontractors, labour contractors and temporary workers they employ?
2. How can governments and employers' and workers' organizations collaborate to meet the future skill requirements of the construction industry? In particular, how can subcontractors, labour contractors and the self-employed become involved in training schemes?
 3. What measures can governments and employers' and workers' organizations take to promote safe working practices and improved conditions of work in the sector?
 4. What should be the priority areas for ILO action, in particular in research or technical cooperation, to further the Decent Work Agenda in the construction industry?

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