



Infrastructure & Cities
for Economic Development

A faint, stylized world map is visible in the background, composed of numerous small, semi-transparent circles in shades of grey, green, and blue, arranged to form the continents.

Construction Sector Employment in Low Income Countries

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Authors: Andrés Mella, Matthew Savage



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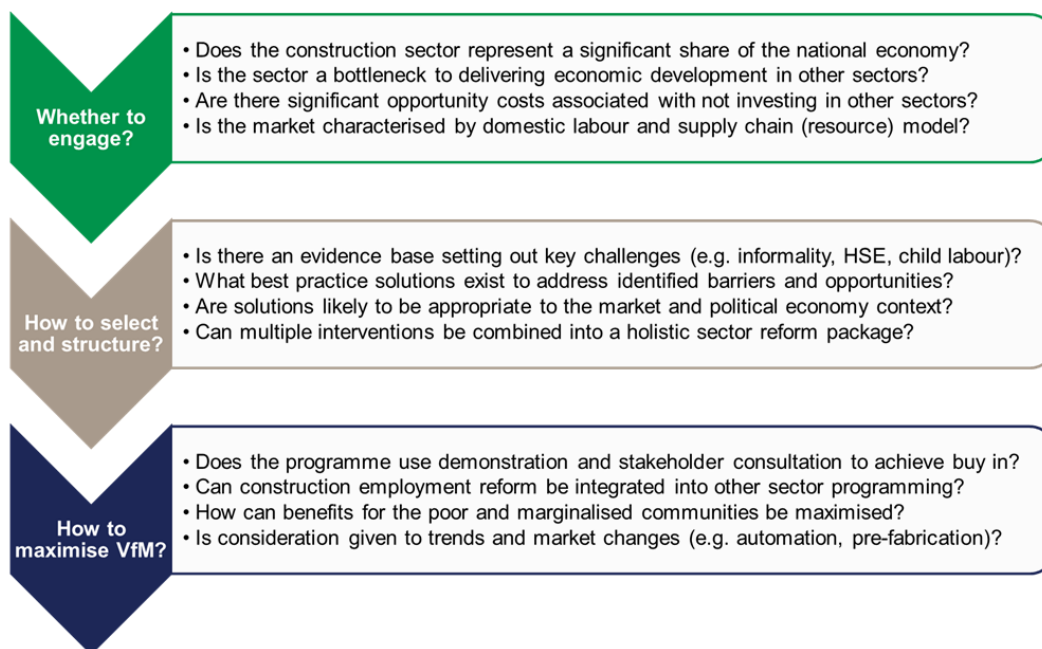
Executive summary

The construction sector in DFID focus countries is important in both economic and employment terms, and continues to grow in size. The sector is labour-intensive, currently employs more than 70 million workers in DFID countries of focus (around 7.6 per cent of total employment), and is expected to continue to expand. There is also low but growing participation of women (11.2 per cent). The evidence suggests that supporting the construction sector is likely to deliver strong economic benefits, as:

- The sector is relatively labour-intensive and tends to generate more jobs (direct, indirect and induced) than other sectors although this is declining over time in all countries;¹
- The sector reports a high level of gross economic output per unit invested (in excess of 3:1) across all levels of economic development (high-, middle- and low-income countries);
- Where labour and resource supply chains are domestically sourced, economic value is better captured in the domestic economy;
- Spillover effects associated with construction can play a significant role in the development of the wider economy (e.g. growth in services, health, education), and;
- Investment in the sector and its supply chain can provide an economic stimulus during periods of economic downturn, and can make an important contribution to poverty alleviation.

Employment practices within the construction sector are weak in DFID focus countries, however. Challenges in the sector include *high informality* (76.5 per cent) with the proliferation of non-standard forms of employment (including part-time, casual and temporary contracts), a *poor safety and health record*, the *presence of child and forced labour* in material supply chains (such as brick kiln and stone quarrying), a *lack of social protection benefits* (such as pension schemes, maternity leave, and unemployment benefits) that are often correlated with poverty and vulnerability, and *significant skills shortages* that affect sector productivity and can indirectly contribute to lower wages and slower economic growth. The extent to which each country is affected requires a more granular level of understanding than is currently available in international data sets, particularly in LICs.

In deciding whether and how to engage with the construction sector, there are a number of dependencies to consider and key questions to answer. These are outlined in the figure below:



However, the report finds that there is only limited availability of indicators and evidence in global data sets (e.g. ILO, World Bank) that might usefully inform programming decisions at the country level (particularly

¹ Job generation in the sector, however, seems to be lower in low-income countries (LICs) than in higher income countries, perhaps due to the lower level of development within the construction industry supply chain.

for LICs). For example, data on the share of economy represented by construction is not disaggregated within the World Development Indicators, which is split only by services and industry. While the ILO provides some insight into the nature of labour market issues by country, contextual information on the underlying causes and constraints is limited. Economic linkages between construction and other sectors, and the potential opportunity costs associated with investing in construction, can only be understood through more detailed country-level analysis, a review of locally available data and stakeholder interviews.

Care should be taken to ensure that interventions to raise employment in the construction sector are sustainable, and supported by growth in aggregate construction demand within the economy.

Key considerations also include whether engaging to improve standards of employment deliver benefits to significant numbers of marginalised or exploited workers, and whether the lack of domestic capacity to deliver high quality and cost-effective infrastructure is limiting the enabling economic benefits of improved transport, power or other services. Where labour and materials are heavily import dependent, engagement in the domestic market may not be as effective as other models (e.g. engaging with MNCs). Meanwhile, FCAS states may benefit from the direct investment in basic services provision, or in social protection rather than the quality of the construction supply chain.

Identifying suitable interventions requires a comprehensive understanding of the political economy.

The report presents a number of potential types of engagement for addressing identified challenges. However, these engagements must be tailored to the particular country context. For example, the structure of the construction industry in DFID focus countries is often not conducive to collective bargaining and union density (due to the high prevalence of informal and casual workers and micro-enterprises). In these countries, it may be better to promote more inclusive forms of social dialogue (e.g. associations of informal workers and micro-enterprises, and the promotion of linkages between workers and employers' associations).

Good practice programmes exist in several developing countries from which lessons can be learnt as to how poor employment practices in the sector can be addressed.

For example, market growth and consolidation can support the dynamic towards greater formalisation and improved supply chain standards. Yet rapid market growth can also exacerbate challenges (e.g. around skills and safety), requiring additional institutional and regulatory support. The report identifies a range of potential programming interventions that can help address construction employment issues, including programmes on:

- Women's participation in the construction industry.
- Mobilising engagement with foreign contractors.
- Increasing formality.
- Strengthening Occupational Safety and Health (OSH) approaches.
- Reducing child labour.
- Improving the provision of training to fill skills gaps and address some of the above challenges.

Interventions that integrate a broad range of activities at multiple levels (pilots, policy, market linkages) are more likely to be successful.

Market and political economy challenges that can undermine efforts to reform construction markets include a focus on lower costs, ever increasing informality, the oversupply of cheap unskilled labour and capacity issues among employers and regulators. Evidence from existing programming indicates benefits from engaging simultaneously across a range of appropriate intervention areas. This allows programming risk diversification, and also promotes cross-learning and synergies. The most successful construction sector programmes seek to combine demonstration initiatives (e.g. specific job creation or improvement activities) with scale-up approaches (either through regulators, construction industry associations, or other sector bodies). The demonstration effect is key to creating trust; showing proof of concept; and reducing employer concerns around costs, labour issues, and productivity.

Construction employment interventions offer good opportunities to deliver other development priorities, and can be integrated into wider programming.

Construction sector employment interventions can potentially deliver strong value for money (VfM) co-benefits where they are integrated with more focused sectoral interventions (e.g. roads, transport, housing), or other cross-cutting priorities (e.g. climate change, poverty alleviation, female empowerment). DFID might therefore explore opportunities to include measures to improve construction employment as sub-components to larger programmes. One example is green

construction (e.g. Zambia Green Jobs Programme) which simultaneously delivers job growth and reform within a larger low carbon development supply chain. Such projects may have a different primary purpose (e.g. developing supply chains for an emerging sector), but can accommodate measures to promote job creation, reskilling, or regulatory reform.

There are good practices in stakeholder engagement and programme design that can enhance VfM.

A review of existing construction sector interventions indicates that there are a number of important key success factors (KSFs) in implementing successful employment practice programmes. These include:

- Engagement with high-level stakeholders (particularly to support regulatory reform and / or the adoption of voluntary best practice).
- Focusing efforts in a small number of high impact initiatives (to build visibility and trust).
- Engaging with both workers and private sector employers so that incentives are aligned, and proposed solutions are acceptable.
- Anchoring initiatives in larger scale construction capital investment projects (for greater chance of economic viability, labour demand, and skills relevance).
- Adopting a market supply chain based approach that looks at skill sets beyond pure construction labour, thereby supporting sector viability.

The presence of foreign contractors should not be regarded as a barrier to engagement, although migrant labour requires a differentiated programming approach. Foreign contractors potentially can be assets in improving employment markets in construction, as they can raise standards in the supply chain, and deliver investment in training or apprenticeships. Also, it should not be assumed that high levels of international contractor involvement (e.g. Chinese Engineering, Procurement and Construction (EPC) contractors) is automatically associated with migrant labour (as this is more likely to be at managerial level). The economics of imported labour mean the trend towards greater use of domestic labour is likely to continue. There are, however, few models of successful engagement between donors and contractors from emerging economies from which to draw lessons about successful engagement. Where migrant labour does form a sizable proportion of construction sector labour, then the focus should be on conditions (informality, OSH), rather than on skills, the benefits of which are unlikely to be captured in the domestic economy.

Trends in supply chain integration and mechanisation have the potential to reduce or change the pattern of labour intensity in the construction sector. The design of labour-intensive programmes in the construction industry (i.e. where job creation is the primary focus) may run counter to prevailing efficiency trends associated with increased pre-fabrication and mechanisation, particularly for larger projects in more developed (lower) middle-income economies. As such, there is potential for temporary employment gains to be promoted at the expense of improved efficiency and quality of delivery, rather than maximising 'total factor productivity' (added value) within the sector. In developing countries, trends towards mechanisation and pre-fabrication are more likely to emerge initially in larger-scale construction projects, with greater involvement of foreign contractors and more complex supply chains. Such scenarios favour investment in worker upskilling and retraining (potentially moving up the supply chain into fabrication). The use of the construction sector to create lower skilled jobs is better done in market contexts where there is no immediate prospect of greater efficiency or economies of scale (i.e. in community-scale construction works) or in poorer / low-wage markets where there is less immediate opportunity for improvements in efficiency.

There are opportunities to undertake cost benefit analysis on programme development, but the current evidence base for similar benchmarks is weak. There are several potential quantifiable benefits associated with construction sector programme appraisal, including avoided loss of life and injury, improved wages, new supply chain jobs, greater inclusion, improved productivity and wider spillover effects to the local economy. However, care should be taken to ensure that additional costs to employers are also recognised, as improved labour systems often represent an economic transfer from employers to employees and the social system. Care should also be taken in the use of shadow wage rates to value changes to employment. These benefits can be incorporated into a cost-benefit model as part of programme development. However, the report finds that the use of cost benefit analysis on construction employment interventions is currently limited in the literature, and there is therefore scope for using future DFID interventions to help build the methodological robustness of such approaches and generate important evidence.

Background

More and better jobs

DFID's *Economic Development Strategy* sets out a vision for lasting progress from 'creating productive jobs for women and men that generate rising economic returns and improving working conditions'. It states an ambition to increase the number and quality of jobs in poor countries, and generate jobs and economic opportunities for excluded groups: women and girls, people with disabilities, people living with HIV. DFID seeks 'to expand access for the poorest to jobs in high growth-potential sectors with improving working conditions'. The strategy highlights DFID's ambition to promote inclusive growth through job creation, and to focus on creating jobs for those who are poor and marginalised and operating in the informal economy.

Productive employment and decent work are key elements to achieve fair globalisation and poverty reduction. The International Labour Organisation (ILO) has developed an agenda for the community of work looking at job creation, rights at work, social protection and social dialogue, with gender equality a cross-cutting objective.

The construction sector

Construction is an important sector in almost all of DFID's focus countries, as it is a major producer of capital infrastructure necessary for the growth of most economic sectors, and of vital social goods such as housing. In many low-income countries (LICs), the construction sector requires updated regulations, improved management and better-quality infrastructure, including roads and buildings, as well as a more efficient and cost-effective supply chain. Underdeveloped sector capacity leads to a greater reliance on foreign expertise and can severely limit opportunities for domestic job creation and enterprise development.

This report seeks to explore opportunities for and barriers to the construction industry being a source of productive and decent job creation in LICs. DFID's focus is on sectors that can unlock growth: energy, infrastructure, urban planning, manufacturing, commercial agriculture, and financial services. The construction sector is fundamental for delivering infrastructure, and this work will help to build the evidence base on its potential to support and promote productive employment.

Objectives of the report

The objective of this report is to answer the following four questions across DFID's focus countries:

1. What proportion of the [national] workforce is employed in the construction industry in DFID focus countries?
2. What is the nature of construction industry employment in DFID focus countries, e.g. conditions, regularity of work, employment of women and children, safety, etc.?
3. What are the barriers to, and opportunities for, scaling up quality employment² [for workers resident in the country / region] in the construction industry in DFID focus countries?
4. Would investing in strengthening the construction industry and creating / improving the quality of jobs in the construction industry create good Value for Money (VfM) for UK Aid?

Methodology

Desk research was conducted to answer the abovementioned questions. This included the compilation of quantitative and qualitative data on employment and working conditions in the construction sector from ILO databases, as well as published construction and labour-related reports. Qualitative data included publications, programme reports, evaluations and support documentation, which were reviewed for the inclusion of case-study type examples.

Quantitative data comes from an ILO database that includes 26 countries for which there is comparable data. Comparable nationwide statistics were not available for Somalia. Disaggregated data between Sudan and

² Quality employment is defined as employment that complies with the main pillars of the decent work agenda: <http://www.ilo.org/global/topics/decent-work/lang--en/index.htm>

South Sudan was also not available. The source of labour market estimates in this report is the ILO World Employment Social Outlook, which itself uses the ILO Trends econometric models, October 2014. The ILO Research Department actively maintains econometric models which are used to produce estimates of labour market indicators in the countries and years for which country-reported data are unavailable. These give the ILO the ability to analyse global and regional estimates of key labour market indicators and trends.

The principal source of information for the ILO Trends econometric models database is the ILO Key Indicators of the Labour Market (KILM), 8th edition. Data is complemented with ILOSTAT and ILO's Short-Term Indicators (STI). For India, tabulations based on data from the National Sample Survey Organization (NSSO) survey on the Employment and Unemployment Situation in India were used. Data based on the most recent labour force survey conducted in Bangladesh were also considered.

Employment in the construction sector captures the distribution of the formal and informally employed population in the construction sector. This is done by capturing information from labour market surveys instead of using exclusively official taxing registries. However, the capacity to include the entire informal sector is often limited in LICs.

Construction is defined according to the UN's International Standard Industrial Classification of All Economic Activities. Such category includes site preparation activities, building of complete construction or parts thereof, civil engineering, building installation and the building completion and renting of construction or demolition equipment with an operator.³ This definition does not include employment in the construction supply chains such as mining and transportation.

Limitations

This study was undertaken over a short timeframe using desk research, with limited resources available to engage at country level. It offers a high-level snapshot of current evidence, rather than seeking to inform detailed programme design or funding decisions. More significant resources would be required at country level to assess the robustness of national data, to identify the underlying causes of labour market challenges, and to weigh the potential costs and benefits of engagement. A number of methodological caveats should also be noted, particularly relating to estimates of economic returns and value for money (VfM) associated with construction employment interventions (employment, economic effects):

- The evidence base for economic and employment effects of investment in the construction sector in LICs is very limited. ILO analysis used in this report draws primarily upon a database of 45 EU and other large economies, of which 30 are HICs and most others are MICs. Only one LIC (Niger) is included in the analysis. Six LMICs (China, India, Indonesia, Morocco, Paraguay and Sri Lanka) are included, although some have since graduated to UMIC status. Several additional individual country studies do exist (Ghana, Sri Lanka, Pakistan), but these are limited in scope and of varying quality.
- ILO Data sets used for economic and employment effects are relatively old (1995-2009) and do not reflect more recent developments or trends. Other country level studies similarly tend to draw on historic data (10 years or more). More recent analysis is not available.
- Economic and employment effects are calculated using econometric input-output (I-O) models. I-O models are based on a simplified model of the economy, and are subject to a large number of assumptions.⁴ They are more suitable for high level trend analysis than detailed country assessment.
- ILO data sets on the nature of construction employment are largely dependent on national data sets prepared by government statistical offices. These tend to be of varying quality and consistency, particularly in LICs, and interpolation and approximation methods are often used.
- There are no global indicator sets providing a consistent measure of the importance of construction within individual economies, nor the scale of potential forward and backward linkages.
- While ILO data sets allow some insight into the nature of employment and labour conditions at country level, they do not explain underlying causes of these trends (structural, cultural, economic).
- Case studies measuring the economic benefits of construction employment interventions are limited.

³ For detailed description, see Part Three, Category F in United Nations Statistical Commission (2002)

⁴ See ILO (2015e) for an overview of limitations of Input-Output models

1. What proportion of the workforce is employed in the construction industry in DFID focus countries?

Key Findings

- The main areas of construction growth in DFID focus countries are infrastructure building in transport, energy and social infrastructure.
- Around 70 million people work in construction in DFID countries of focus, corresponding to an average of 7.6 per cent of the total workforce in these countries.
- Female employment constitutes a small but growing share of employment in DFID focus countries, averaging 11.2 per cent in 2014. This is higher than the world average of 9.5 per cent.
- Most DFID focus countries have smaller than the global average construction sector employment, but are growing at a faster than average rate. The impact of investing in improving construction sector employment in these countries has the potential to reach a growing proportion of the population.

The construction sector plays an important role in the economic development of countries. It currently represents about 13 per cent of global GDP and this is expected to increase to 14.7 per cent by 2030.⁵ *Global Construction 2025* forecasts that global construction demand will increase to 2025, especially in countries such as China and India – which will represent 63 per cent of global construction profits by 2025.⁶ Three of the principal driving forces of growth in construction markets are:

1. **Government infrastructure spending plans:** Around 80 per cent of global infrastructure spending is publicly funded or funded through Public-Private Partnerships.⁷ In terms of value, power and electricity projects dominate (US\$5.4 trillion), railways is the second-largest sector (US\$5.2 trillion), followed by roads projects (US\$1.9 trillion), airports and ports projects (US\$1.2 trillion), and water and sewerage (US\$421.5 billion).
2. **General economic growth:** The size of the construction sector is positively but moderately correlated to economic growth, suggesting that the construction sector employs more workers when the economy is growing.⁸
3. **Urbanisation:** 1.5 million people are added to the global urban population every week. A staggering 90% of this growth will take place in African and Asian countries with rapid urbanisation placing huge demands on infrastructure, services, job creation, climate and environment.⁹

The construction sector can be divided into three broad sub-sectors: civil construction (e.g. roads and highways, bridges), industrial construction (e.g. oil and gas platforms, mining infrastructure) and residential and commercial construction (e.g. single-family dwellings and office buildings). Main areas of construction growth in DFID focus countries are infrastructure building in transport, energy and social infrastructure (e.g. schools, hospitals, water).¹⁰ Residential and industrial construction is predicted to grow more moderately. This chapter presents an overview of employment in construction in DFID focus countries, with general trends as well as cross-country information.¹¹ It presents specific data on female and foreign participation, as well as jobs in construction supply chains.¹²

⁵ Schilling (2015)

⁶ Global Construction Perspectives and Oxford Economics (2013)

⁷ Infrastructure IC (2017)

⁸ The correlation coefficient is 0.19. It is obtained with the employment share of the construction sector for the year 2014 (ILOSTAT) and development is defined as GDP per capita, PPP (current international \$) 2014.

⁹ PwC analysis of United Nations, Department of Economic and Social Affairs, Population Division (2014).

¹⁰ Global Construction Perspectives and Oxford Economics (2013)

¹¹ DFID priority countries include: Afghanistan, Bangladesh, Burma, Democratic Republic of Congo (DRC), Ethiopia, Ghana, India, Kenya, Kyrgyzstan, Liberia, Malawi, Mozambique, Nepal, Nigeria, Occupied Palestinian Territories, Pakistan, Rwanda, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Tajikistan, Tanzania, Uganda, Yemen, Zambia and Zimbabwe.

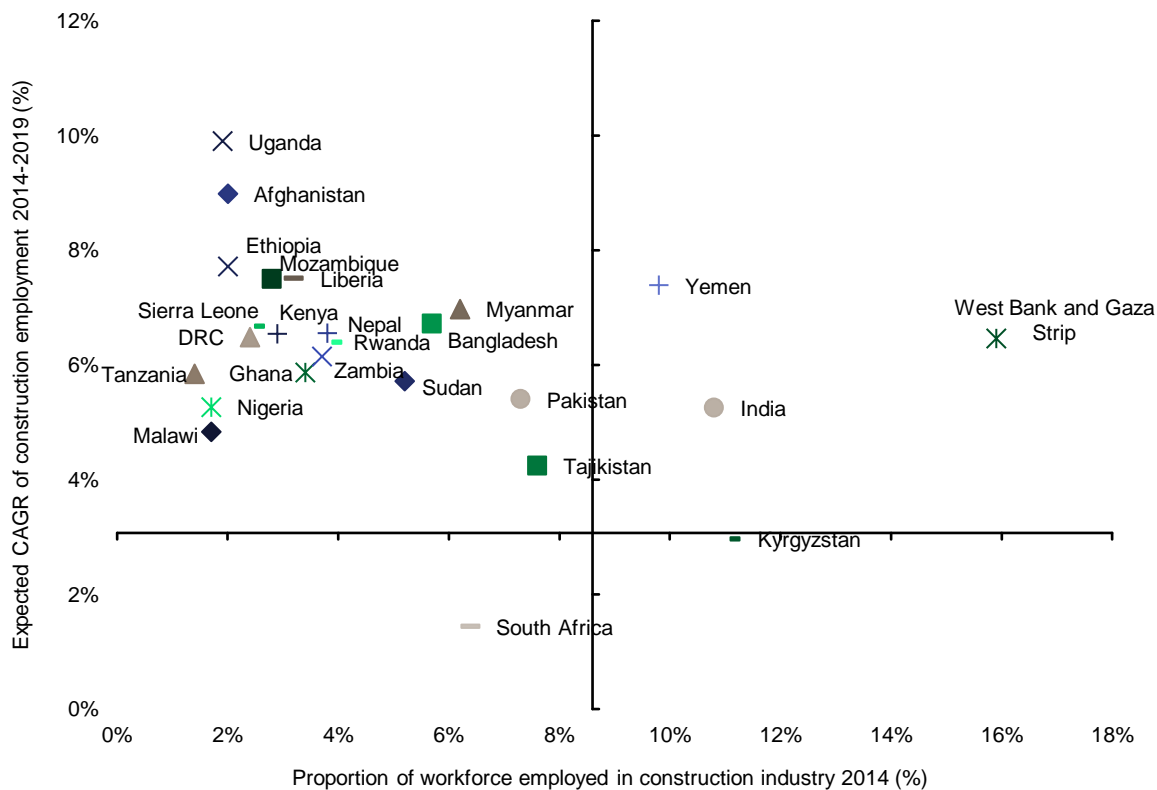
¹² Construction supply chains refer to the cross-border organization of activities required to produce goods or services and bring them to consumers through inputs and various phases of development, production and delivery.

1.1 Employment trends

The construction sector is a major source of employment; not only in on-site construction, but also in construction-related professional services, and the supply of materials and components such as bricks and wood. The construction sector is an important sector in stimulating local economic activity, particularly if linked to an improvement in conditions in low income settlements.¹³ It is also important to improve access to trade and essential services such as water and electricity.

In 2014, the construction, renovation, maintenance and demolition of buildings and civil engineering projects together accounted for more than 273 million (part-time and full time) jobs worldwide, constituting an estimated 8.6 per cent of the total global employment.¹⁴ Around 70 million people work in construction in DFID countries of focus, corresponding to an average of 7.6 per cent of the total workforce in these countries. Female employment constitutes a small but growing share of employment in DFID focus countries: 11.2 per cent on average in 2014. This is higher than the world average of 9.5 per cent.¹⁵ Figure 1 shows the share of the workforce employed in the construction industry in DFID focus countries, current and expected in 2019.

Figure 1: Proportion of the workforce employed in the construction industry (2014) and expected change 2014-2019



Source: ILO (2015a). Note: Origin is set at 8.6 per cent, 3.1 per cent, the world average construction employment in 2014 and expected compound annual growth rate (CAGR) of construction employment between 2014 and 2019. CAGR is calculated with the following formula $CAGR = ((Emp_n - Emp_0) / Emp_0) / n$, where Emp_n is the forecasted employment and Emp_0 is the employment at the reference year.

The top right quadrant of Figure 1 shows countries where both 2014 construction sector employment and projected growth (to 2019) is above the global average (essentially those countries where the sector is large in size, and there is a strong growth opportunity): West Bank and Gaza Strip, Yemen, and India. The bottom left quadrant represents countries with a small sector and low expected employment growth. Figure 1 shows that most DFID focus countries have smaller than global average construction sector employment, but are growing at a faster than average rate. The impact of investing in improving construction sector employment in these countries has the potential to reach a growing proportion of the population. Uganda (9.9 per cent),

¹³ ILO (2012)

¹⁴ Authors calculations based on ILO (2015a).

¹⁵ *ibid.*

Afghanistan (8.9 per cent) and Ethiopia (7.7 per cent) have the highest expected annual average employment growth to 2019. Countries in the bottom right quadrant (Kyrgyzstan) have a large construction sector with low expected employment growth. It follows that investment in these countries may be able to improve employment conditions, but would be less likely to increase the number of jobs on a large scale.

1.2 Foreign participation

Migrants have long been a structural component of the construction workforce in many countries. The International Migration Report (2015) of the UN Department of Economic and Social Affairs compiles estimates of migrants living for one year or longer in a country other than the one in which he or she was born.^{16,17} Data includes both labour migrants as well as accompanying family and students. Information should therefore be understood as a proxy of labour migration. Table 1 shows that migrants as a percentage of the total population in DFID focus countries ranged from 0 to 7 per cent in 2015.

Table 1: Foreign presence in DFID countries of focus

Country	Number of migrants (thousands)		Migrants as a percentage of total population		Female share of migrants (percentage)	
	2000	2015	2000	2015	2010	2015
Afghanistan	75.9	382.4	0	1	44	49
Bangladesh	987.9	1422.8	1	1	14	13
Democratic Republic of the Congo	744.4	545.7	2	1	51	52
Ethiopia	611.4	1072.9	1	1	47	49
Ghana	191.6	399.5	1	1	49	46
India	6411.3	5241	1	0	48	49
Kenya	699.1	1084.4	2	2	50	50
Kyrgyzstan	389.6	204.4	8	3	58	60
Liberia	151.9	113.8	5	3	46	43
Malawi	232.6	215.2	2	1	52	52
Mozambique	195.7	222.9	1	1	47	52
Burma	98	73.3	0	0	47	45
Nepal	717.9	518.3	3	2	66	69
Nigeria	487.9	1199.1	0	1	45	45
Pakistan	4181.9	3629	3	2	46	49
Rwanda	347.1	441.5	4	4	49	50
Sierra Leone	98.2	91.2	2	1	44	45
Somalia	20.1	25.3	0	0	47	46
South Africa	1001.8	3142.5	2	6	40	40
South Sudan	..	824.1	..	7	..	49
West Bank and Gaza Strip	275.2	255.5	9	5	55	56
Uganda	634.7	749.5	3	2	50	50
Yemen	143.5	344.1	1	1	44	48
Zambia	321.2	127.9	3	1	49	50
Zimbabwe	410	398.9	3	3	43	43

Source: United Nations (2015)

¹⁶ Estimates of the number of migrants in the construction industry are only available for Kyrgyzstan and Yemen. Source: ILOSTAT.

¹⁷ This means that many foreign workers and international students are counted as migrants. Additionally, the UN considers refugees and, in some cases, their descendants (such as Palestinians born in refugee camps outside of the Palestinian territories) to be international migrants. Estimates of the number of unauthorised immigrants are included in these reported figures. Tourists, foreign-aid workers, temporary workers employed abroad for less than a year, and overseas military personnel are not counted as migrants.

The incidence of migrant workers in the construction sector is generally higher than in other sectors due to the seasonal and project-based nature of employment. Construction is often considered an ‘easy entry’ sector because it needs a considerable amount of non-skilled and semi-skilled workers. This, together with the fact that the sector is often not heavily regulated in DFID focus countries makes it an easier sector to enter for non-regulated migrants. In some cases, this leads to the participation of large amounts of foreign labour.¹⁸ In Kyrgyzstan for instance, a household income / expenditure survey in 2015 showed that migrants constitute around 29 per cent of total workers in the sector (above an average of 8 per cent across all sectors).

The presence of Chinese contractors together with large numbers of migrant workers in the construction sector across Africa is being increasingly scrutinised. It has been argued that such foreign contractors do not employ the local workforce on their projects. Recent data however reveals that up to 85 per cent of employees of Chinese contractors in Africa are locals. More information can be found in Chapter 2.2 and Chapter 4.2.

1.3 Female participation

Despite increasing in recent years, participation of women in employment in the construction sector remains lower than in most other sectors. Equal access to employment is far from being achieved.¹⁹ Empirical observation of ILO construction employment data shows that in most countries changes in the labour market are more pronounced for women than for men.²⁰ When there is high demand for labour in the sector, female employment rates increase proportionately more than male rates. When there is a reduction in the construction workforce, female employment decreases faster than male employment.

According to ILO data (2015a), women constitute 9.5 per cent of the total construction work force.²¹ The rate of women’s participation in the construction sector in Asia is generally higher than in Africa. Figure 2 shows the share of women workers out of all workers in the construction industry in DFID focus countries in 2014, and the expected change between 2014 and 2019.²² Average annual employment growth for women is 5.0 per cent, which is higher than overall average employment growth of 3.1 per cent (see Figure 2 on the next page).

¹⁸ ILO (2015b) and ILO (2016)

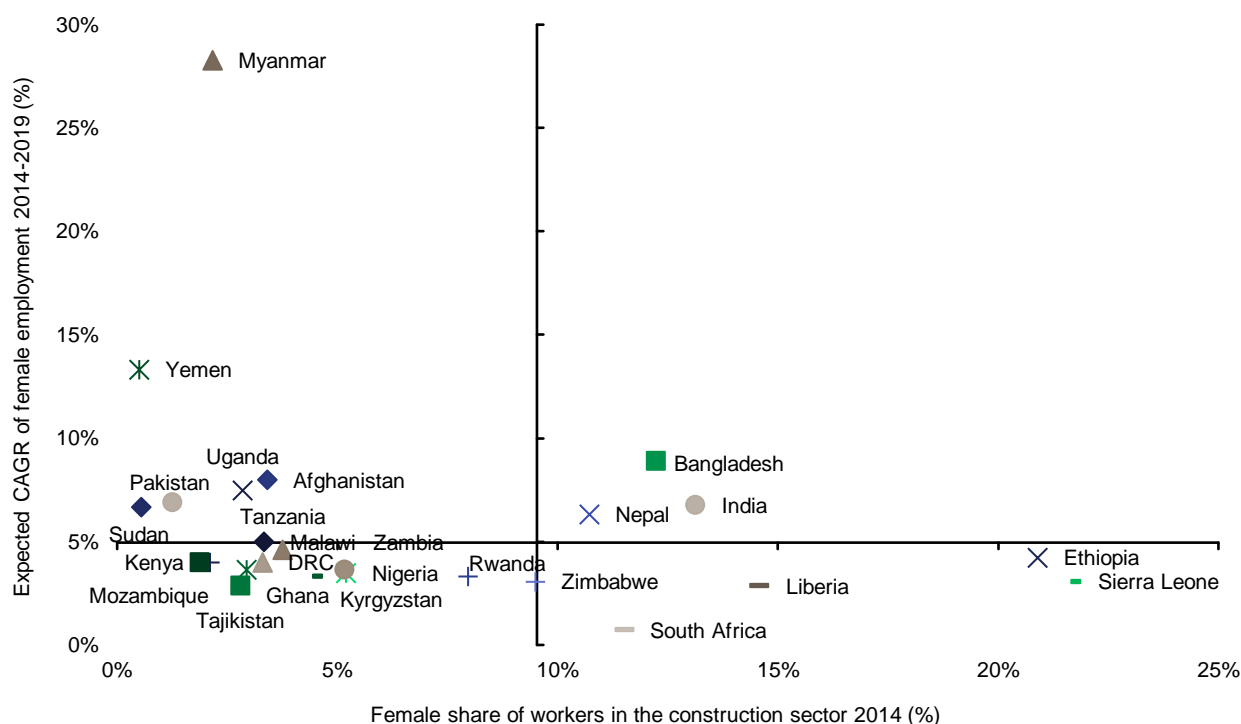
¹⁹ Forbes Insights (2012)

²⁰ Author calculations based on the ILO(2015a)

²¹ ILO (2015c)

²² Figures collect informal employment in formalised enterprises but do not capture all the informal employment. ILO (2001) and Pais, J. (2002).

Figure 2: Share of women workers out of all workers in the construction industry in 2014, and expected change by 2019



Source: ILO(2015a) Note: Origin is set at 9.53 per cent, 4.95 per cent, the world average female share of employment in the construction sector in 2014 and expected CAGR of female construction employment between 2014 and 2019. CAGR is calculated with the following formula $CAGR = ((Emp_n - Emp_0) / Emp_0) / n$, where Emp_n is the forecasted female employment and Emp_0 is female employment at the reference year.

The top right quadrant shows countries with larger than average female presence and high projected employment growth for women: including Bangladesh, India, and Nepal. The bottom left sector represents countries with lower than average female presence and low expected female employment growth. The Occupied Palestinian Territories is not included in Figure 2 as ILO data showed zero female employment in the construction sector. Most DFID countries fall into this category – they are still expected to experience growth in female employment, although lower than the 5.0 per cent average. Countries in the top-left quadrant have lower than average female presence in the sector currently, but higher than average expected growth. Female employment will experience outstanding growth in the construction sector in Myanmar, rising from 41,000 women employed in 2014 to 99,000 in 2019 (CAGR 28.3 per cent). Such growth is spurred by high economic growth and the development of Myanmar’s manufacturing sector as well as increasing women participation of women in the labour market. There may be a particular opportunity for investment here to support already growing female employment in the sector, adopting policy and operational measures to adapt the construction industry’s skills and occupational health and safety environment to women participation. Countries in the bottom right quadrant (Kyrgyzstan) have large female presence with low expected employment growth. The economies where the sector employs a larger proportion than average of female workers are Sierra Leone (21.7 per cent), Ethiopia (20.9 per cent), and Liberia (14.6 per cent).²³ High female participation in Sierra Leone could be partly explained by its strong labour movement with high union density and collective bargaining. However, in Ethiopia high female participation corresponds to sharp increases in labour demand.²⁴

In some cases women’s participation is partially explained by women working in administrative, human resources, clerical and office-related technical areas of work which do not generally require travelling to

²³ High female participation in Sierra Leone may be partially explained by a strong labour movement with high union density and collective bargaining

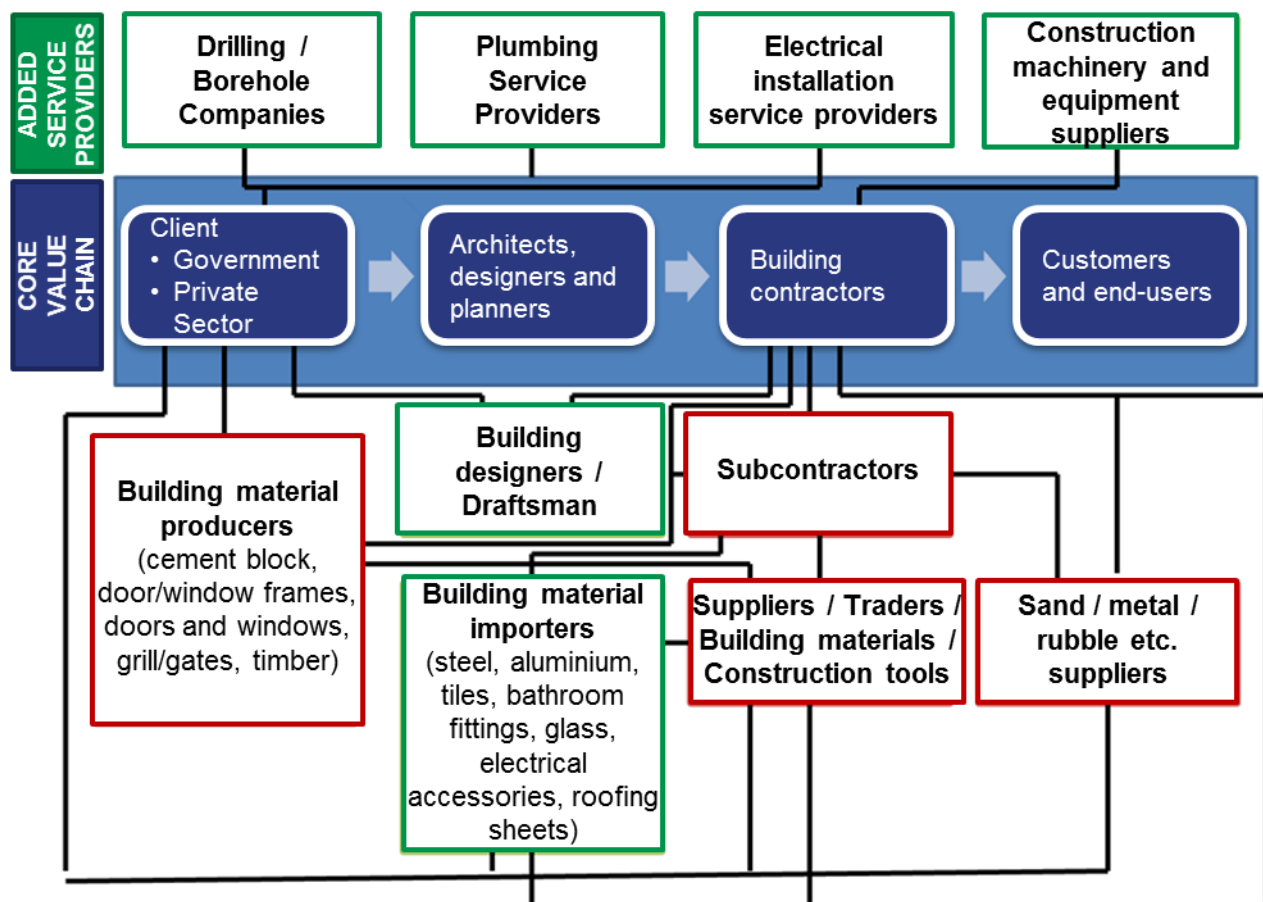
²⁴ NPR (2013).

construction sites.²⁵ The share of women workers in the construction sector has a weak positive correlation to economic growth (0.06). Union density is on the other hand more positively correlated with female participation in the sector (0.66).

1.4 Jobs in construction supply chains

The construction sector is underpinned by an extensive supply chain, both in terms of service delivery and the underlying materials and inputs. This can include companies and workers engaged in upstream industries such as mining and forestry, as well as intermediaries (e.g. processing, manufacturing, transportation). There is also a large downstream industry related to real estate and commercial property management, and other infrastructure services. Figure 3, on the next page, illustrates the different elements of the construction value chain, mapping the large number of potential stakeholders involved.

Figure 3: Simplified building construction sector value chain map



Source: ILO (2014). Red boxes indicate poor working conditions in value chain actors.

The size of the construction supply chain and related industries (both backward and forward) is important because it demonstrates the broad sectoral scope to improve employment practices and maximise economic growth opportunities. Most of the labour opportunities associated with construction are indirect and happen through the manufacture of goods or the supply of ancillary services. These sectors become even more important as construction methods shift towards pre-fabrication and supply chains become more integrated. Supply chain interventions are therefore likely to be more effective than direct construction interventions in improving the quantity and quality of employment in a sustainable manner. These issues are discussed in more detail in Chapter 4.

²⁵ ILO (2015c)

2 What is the nature of construction industry employment in DFID focus countries?

Key Findings

- In many DFID countries of focus, the construction sector has witnessed the proliferation of non-standard forms of employment, including part-time, casual and temporary contracts. While these employment arrangements may assist with the industry's flexibility and growth, they sometimes provide either inadequate or no social protection for workers.
- There are large differences in informality rates among these countries, but informality is generally high. DFID interventions promoting formalisation could focus on countries with highest informalities first.
- Migrants – both temporary and long term – constitute an important component of the workforce in the construction industry. Contrary to other sectors with high foreign participation such as the health care sector, the construction sector relies on migrant labour often due to its seasonal and project-based nature, as well as its distinct spatial characteristics.
- The fundamentally hazardous nature of the work, changing locations of construction sites and work environments, and high rates of staff turnover make construction the most dangerous sector.
- Participation of women in construction sector employment is lower than in many other sectors across DFID's focus countries. In some DFID countries, women and other marginalised groups perform the most strenuous, dirtiest and physically demanding of tasks, in an already harsh work environment.
- Skills gaps in developing countries vary from country to country, due to different technological patterns and employment structures. The higher the technical requirements, the more important it is to have qualified workers.

This chapter explains the nature of construction sector employment in DFID countries of focus. It portrays a fast-changing industry driven by increases in the number of large, complex construction projects requiring high levels of expertise and coordination, and use of subcontractors. The practice of employing labour through subcontractors (often referred to as the "outsourcing" of labour) is both long established and widespread in the construction industries of developing countries, and the prevalence of subcontracting is increasing.²⁶

The chapter focuses on seven specific elements of construction sector employment in DFID countries:

1. Informality and non-standard forms of employment.
2. Incidence of foreign contractors and presence of labour migrants in civil works.
3. Occupational health and safety conditions.
4. Working conditions for women in the construction sector.
5. Presence of child and forced labour in construction supply chains.
6. Skills and education levels.
7. Collective bargaining and union density.

2.1 Informality and non-standard forms of employment

In many DFID countries of focus, the construction sector has witnessed the proliferation of non-standard forms of employment, including part-time, casual and temporary contracts.²⁷ While these employment arrangements may assist with the industry's flexibility and growth, they sometimes provide either inadequate

²⁶ Wells (2006)

²⁷ ILO (2015c)

or no social protection for workers. Key issues include who actually employs workers within the construction sector (the use of intermediaries and gangmasters), and to what extent workers can rely on both regular access to work and being paid for work when undertaken as a result. The lack of social protection benefits such as pension schemes, maternity leave, and unemployment benefits are often correlated with poverty and vulnerability.²⁸ Wages are low (often due to the oversupply of informal labour). Hours may be long, with workers paid at piecemeal rates. Health and safety conditions are poor. There is widespread discrimination in pay for women and other vulnerable groups.

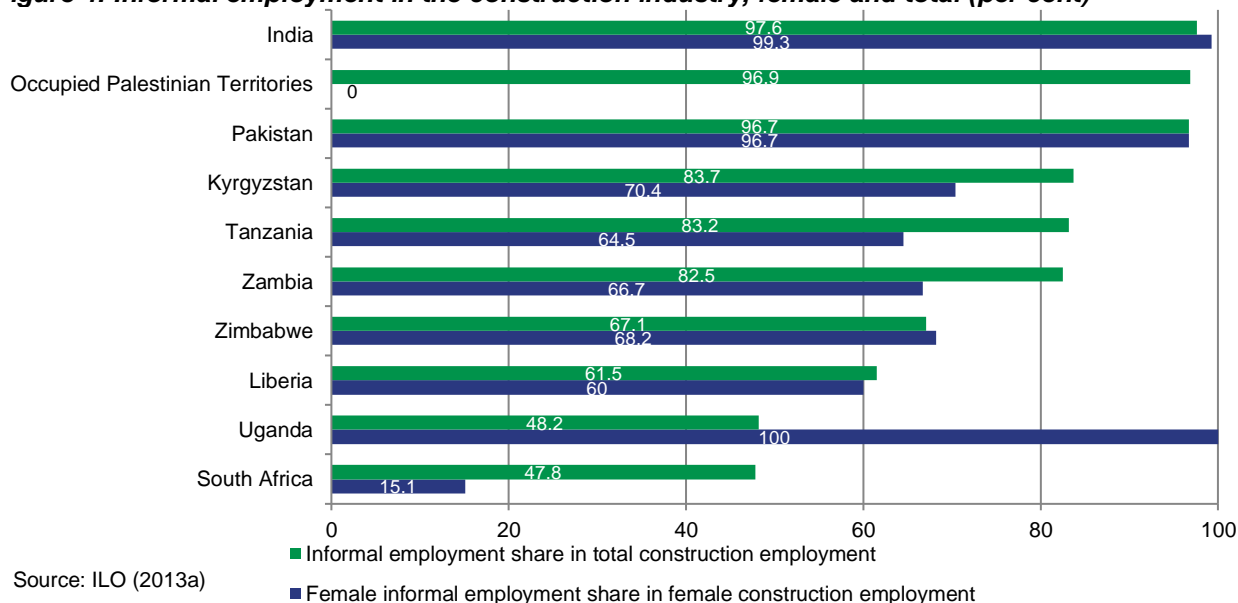
A lack of social protection may also result in additional costs for employers, including:²⁹

- Out of pocket compensation for disabilities or serious illness incurred by workers.
- Hiring of temporary employees to replace ill workers and loss of skilled employees.
- Overtime pay for workers as they may be forced to carry out extra duties on behalf of their injured or ill colleagues.
- Legal costs in cases where an employee sues the employer.
- Penalties for noncompliance with labour standards.
- Loss of contracts due to delayed deliveries.

Informal employment can be divided into employment in the informal sector (mainly self-employment and informal micro-enterprises) and informal employment outside of the informal sector, i.e. enterprises formally registered that employ workers informally.³⁰ Self-employment and informal micro-enterprises are not a new phenomenon in the construction industry, but their prevalence has increased in recent years. Self-employment is partly explained by changing employment relations. Many workers work directly for clients through these direct arrangements. However, self-employment is also associated with increased subcontracting done by enterprises. An ILO report estimated that self-employment alone represents 70 per cent of informal employment in sub-Saharan Africa and 59 per cent in Asia.³¹ The same report calculated that self-employment represents nearly one third of total non-agricultural employment worldwide, and constitutes as much as 53 per cent of non-agricultural employment in sub-Saharan Africa.

Figure 4 shows the incidence of informality in the construction sector for the 10 DFID focus countries for which data is available.³² Data presented in section one includes both formal and informal employment.

Figure 4: Informal employment in the construction industry, female and total (per cent)



²⁸ ILO(2015d)

²⁹ ILO Green Jobs Programme (2014)

³⁰ The informal economy refers to all economic activities by workers and economic units that are – in law or in practice – not covered or insufficiently covered by formal arrangements

³¹ ILO (2009)

³² ILO (2013a).

There are large differences in informality rates among countries in Figure 3, but informality is generally high. Countries with highest informality rates include India, Palestine and Pakistan. DFID interventions promoting formalisation could focus on these countries first. Countries such as South Africa, Uganda, Liberia and Zimbabwe have comparatively low levels of informality. This could be partly due to stronger enforcement by governments, i.e. higher union density and more economic development. With larger government resources, the Department of Labour can tackle informal enterprises and support their formalisation. In a similar way, with high union density, trade unions are more able to reach large numbers of employers and workers to support the formalisation of such enterprises.

For the 10 countries in Figure 3 there is a negative and moderate correlation between the level of informality and the level of economic output (measured as GDP per capita) (-0.19), meaning that the richer a country is (in output terms), the less likely employment will be informal. More GDP per capita means it is more affordable to absorb the additional costs of formalisation. There may also be greater risks to pursuing informal employment, if government agencies have more enforcement power.

Employment surveys covering the informal sector show that there are an increasing number of construction workers employed in enterprises with less than five workers.³³ Such individuals may work in the informal construction industry as employees, as self-employed workers, or as owners of small enterprises employing other workers. In India, much building activity is undertaken directly by small enterprises hired directly by building owners. This is known as the Naka / Mandi section of the industry.³⁴ 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 for a specific project and time. Although there is no reliable data, there is anecdotal evidence that this section of the industry has increased in size in recent years.

2.2 Foreign contractors and labour migrants in civil works

Medium to large multinational firms in the construction industry (those with approximately USD\$1 billion in annual turnover) are moving into new parts of the world. In a recent industry survey, 47 per cent of respondents indicated they were planning to move into new markets both in the global North and South.³⁵ European and American contractor expansion models include high levels of technology and capital-intensive approaches, while Chinese and Indian contractors tend to rely more heavily on labour intensive methods.³⁶ Consequently, the expansion of large construction players can generate positive technology and skills spillovers for small and medium local contracting companies and workers. The right policies and conditions are necessary for harnessing these benefits, including adequately trained workers and sufficient management capacity in national firms. In large-scale projects with technology-intensive contractors, national contractors need to reach a critical size and level of management standards in order to participate in such projects. However, labour-intensive projects allow for the participation of smaller contractors.

Migrants – both temporary and long term – constitute an important component of the workforce in the construction industry. Contrary to other sectors with high foreign participation such as the health care sector, the construction sector relies on migrant labour often due to its seasonal and project-based nature, as well as its distinct spatial characteristics, i.e. construction cannot be moved elsewhere in the search for lower labour, input, or transport costs.³⁷ Foreign workers tend to participate in big civil engineering and industrial construction projects, rather than residential and commercial construction of buildings. This is because large-scale construction contractors ship in workers for big projects when large amounts of workforce power need to be deployed in short time.

³³ Wells (2007)

³⁴ ILO (2001)

³⁵ KPMG, & Armstrong, G. (2015)

³⁶ 41 per cent of Indian labour migrants across the world work in the construction sector, mostly in the Middle East but also in Asia and the Pacific. Source: Grant Thornton India (2016).

³⁷ ILO (2016).

Offsite construction is a phenomenon that can until a certain extent reduce the effects of the spatial characteristics of construction. In countries like UK, Japan and Australia. Source: Taylor (2009).

BOX 1: China's investment in the construction sector in Africa

Chinese enterprises have increased their presence in Africa in the last decade, taking advantage of the Chinese Government's promise to fund projects in Africa. The value of trade between China and Africa increased from USD10 billion in 2000 to USD220 billion in 2014, although it has now fallen slightly because of lower commodity prices. China is now not only a major trading partner, but also a major infrastructure financier.

Infrastructure investment is the key to China's policy and strategy regarding Africa. It has enabled the development of much needed infrastructure projects, many of which would not have otherwise been built. The financial terms of the deals are usually kept secret, but it is generally believed that they take the form of concessional loans, with very low interest rates. Around 25 per cent (USD21 billion) of the total USD 83.4 billion committed to Africa's infrastructure development in 2015 came from China, making it the single-largest bilateral infrastructure financier. This is more than the combined total of the Infrastructure Consortium for Africa, whose members include the African Development Bank, the European Commission, the European Investment Bank, the International Finance Corporation, the World Bank, and the Group of Eight (G8) countries.

There are currently more than 1,500 Chinese firms operating in the construction sector in Africa, and 90% of them are privately owned. Chinese firms dominate nearly 50 per cent of Africa's internationally-contracted construction market. Examples of Chinese financed infrastructure projects include¹:

- **Mombasa-Nairobi Standard Gauge Railway (Kenya):** China EXIM Bank financed more than 90 percent of the USD3.8 billion.
- **Karuma Hydroelectric Power Station (Uganda):** Chinese institutions financed most of the USD1.7 billion.
- **Lekki and Badagry Ports and the Lekki Free Trade Zone (Nigeria):** The China Harbour Engineering Company has committed to invest USD1.5 billion in both projects.
- **Ethiopian Industrial parks:** The China Civil Engineering Construction Company recently completed the Hawassa Industrial Park to serve textile and clothing producers. The same company built the Dire Dawa and Adama industrial parks at a combined cost of USD 315 million and it is expected that Chinese contractors will construct most of the nine projected industrial parks.

Chinese success in Africa is based on three factors: lower costs, higher commitment, and speedy delivery. Chinese contractors have some of the most efficient cost structures in the world. The Chinese government's financing of African infrastructure has helped Chinese contractors win some bids, but even in open-tender projects sponsored by the World Bank, Chinese firms are the biggest winners, winning 42 percent of contracts by value.¹ In some cases Chinese firms are 40 percent cheaper than the next lowest bid for similar levels of quality.

Source: McKinsey and Company (2017)

Foreign participation of workers is often not recorded in national statistics in developing countries for political and economic reasons, but there is increasing evidence that migration through temporary forms of residency (for example, international student visas, circular and multilocational migration, working holiday visas, temporary work visa schemes, and asylum claims) is becoming more commonplace in DFID countries of focus.³⁸

The emergence of regional and international construction labour markets³⁹ means that comparatively more advanced countries with higher wages within the group of DFID countries (such as South Africa) absorb unskilled domestic and regional migrants, generating downward pressures on wages and harsh working conditions for both migrant and local workers.⁴⁰ On the other hand, large international contractors from

³⁸ ILO (2016).

³⁹ The temporary and constantly changing number of construction projects means that large contractors need to constantly shift workers from one site (or country) to another Source: Wells (1996).

⁴⁰ ILO (2016)

countries with sizable construction sectors such as China have been said to rely on large amounts of technically qualified migrant workers (such as carpenters or electricians) to deliver their projects; limiting the employment and skills development of local workers.⁴¹

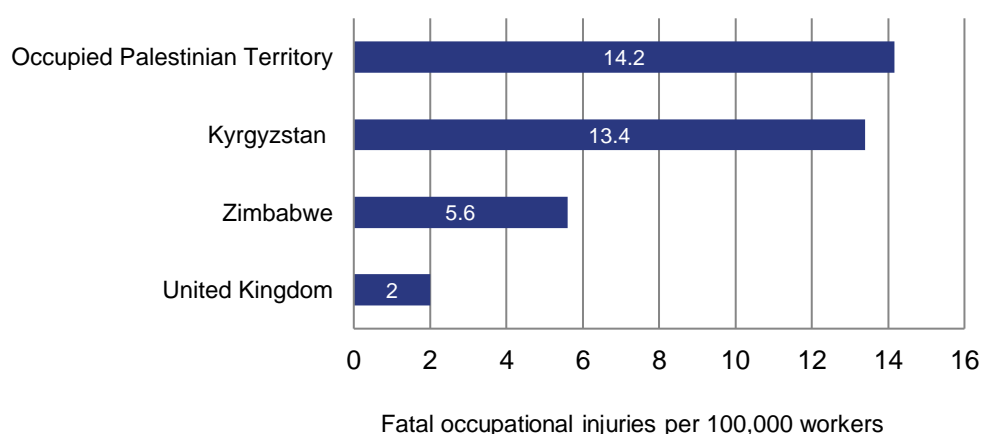
2.3 Occupational health and safety conditions

According to a recent ILO report on the construction sector, approximately 17 per cent of fatal accidents reported globally take place in the construction sector, amounting to 60,000 fatal accidents per year.⁴² The fundamentally hazardous nature of the work, changing locations of construction sites and work environments, and high rates of staff turnover make construction the most dangerous sector. Workers face a range of occupational risks associated with biological, chemical, physical, ergonomic and psychosocial hazards. Safety and health data is scarce and comparability is difficult due to differences in collection and interpretation. Fatality rates also vary significantly from year to year and it is difficult to detect causes of such changes. For instance, a decline in fatality rates may be due to improvements in OSH regulations and compliance; or a decline in business activity; or changes in the way that data is recorded. In many LICs fatalities are underreported due to weak institutional records, but also due to insurance consequences of reporting deaths at work.

Worldwide, the construction industry accident fatality rate stands at more than double that of the ‘all-sector’ average. It is estimated that fatality rates in the least developed countries may be more than double the rates in developed economies, although reliable evidence is difficult to obtain.⁴³ For instance, a recent study estimated that in the Indian construction sector, the number of fatal accidents could be anywhere from 11,614 to 22,080 each year (out of a total of 51 million construction workers).⁴⁴ This represents around 24 per cent of all occupational accidents occurring in India annually.

Worldwide, around 22 construction workers die annually for every 100,000 construction workers.⁴⁵ Figure 5 shows fatal occupational injuries per 100,000 workers in DFID countries of focus, and in the United Kingdom. The countries where information is available have reported fatality rates moderately below the world average. However, they are far away from construction fatality rates in developed countries such as the United Kingdom.

Figure 5: Number of fatal occupational injuries per 100 thousand workers in countries for which data is available, 2010-2015



Source: ILOSTAT.

The main drivers of improved OSH include economic growth and education. Further research would be needed to identify any influence of foreign participation in the construction labour market on OSH outcomes.

⁴¹ Dollar (2016)

⁴² ILO (2015c)

⁴³ ILO (2015c) and Dong (2005)

⁴⁴ Patel and Jha (2016)

⁴⁵ There are 60,000 fatal occupational injuries and 273 million construction workers, ILO(2015C)

Fatal accident rates vary significantly by occupation. Some occupations such as roofers, construction operatives, elementary construction workers, carpenters and joiners can be ten to a hundred times more dangerous than others.⁴⁶ The bulk of fatalities in the sector in LICs are caused by falls from heights and being hit by moving objects such as vehicles and lifting equipment, and contacts with machinery or electricity.

Non-fatal accidents are reported less often than fatal accidents in the construction sector. Most non-fatal accidents are associated with tasks related to material handling and installation of drywalls, piping and ventilation-duct installation, or accidents occurring while moving around the construction site.⁴⁷ There is likely to be even greater underreporting of accidents in the informal sector.

Common health problems in construction work include deafness, musculoskeletal disorders, and exposure to hazardous substances such as asbestos. These problems are particularly present in low income countries, where fewer regulations, poor training, and lower compliance to safety standards contribute to greater exposure to hazards. The difference in health and safety outcomes derives from differences in compliance and training. Table 2 shows the main hazards to which skilled construction workers are exposed.

Table 2: Main hazards to which workers are exposed in the most common construction occupations

Occupation / Task	Hazards
Brick masons	Awkward postures, heavy loads, exposure to cement
Carpenter and woodcrafters	Wood dust, heavy loads, repetitive motion
Crane and lower operators	Stress, isolation
Demolition workers	Asbestos, lead, dust, noise
Drillers	Silica dust, whole-body vibration, noise
Drywall installers	Plaster dust, walking on stitfs, heavy loads, awkward postures
Electricians	Heavy metals in solder fumes, awkward postures, heavy loads, asbestos dust
Excavating and loading machine operators	Silica dust, histoplasmosis, whole-body vibration, noise
Grader, dozer and scraper operators	Silica dust, whole-body vibration, heat, noise
Hard tile setters	Vapour from bonding agents, dermatitis, awkward postures
Insulation workers	Asbestos, synthetic fibres, awkward postures
Painters	Solivent vamours, toxic metals in pigments, paint additives
Pipefitters	Lead fumes and particles, welding fumes, asbestos and dust
Plasterers	Dermatitis, awkward postures
Plumbers	Lead fumes and particles, welding fumes
Road and street construction workers	Asphalt emissions, heat, diesel engine exhaust
Roofers	Roofing tar, heat, working at heights
Solderers	Metal fumes, lead, cadmium
Truck and tractor equipment operators	Whole-body vibration, diesel engine exhaust
Welders	Welding emissions

Source: Weeks: *Health and safety hazards in the construction industry*, op. cit. Note: The classifications of construction trades used here are those used in the United States which includes the construction trades as classified in the Standard Occupational Classification system developed by the US Department of Commerce. However, the list contains the main hazards workers face in LICs apart from the most common construction-heat, risk factors for musculoskeletal disorders and stress- which can be attributable to most occupations.

⁴⁶ Weeks (2011)

⁴⁷ Weeks (2011)

2.4 Working conditions for women and other marginalised groups

Participation of women in construction sector employment is lower than in many other sectors across DFID's focus countries. In 2014, women made up 9.5 per cent of the world's 273 million construction workers. Sierra Leone, Ethiopia, Liberia, and India have a higher proportion of women working in construction than this.

In some DFID countries (i.e. India and Bangladesh), women and other marginalised groups perform the most strenuous, dirtiest and physically demanding of tasks, in an already harsh work environment.⁴⁸ These range from cleaning building sites, brick making and brick carrying, to shovelling gravel or digging drains for sewage systems.⁴⁹ Such tasks are sometimes left to women or other excluded sections of society (e.g. based on ethnicity or caste) due to their lower remuneration. Similarly, a study of informal construction workers in Dar es Salaam (United Republic of Tanzania) revealed that women's main tasks include stone crushing, selling food to workers on construction sites, and working in offices as storekeepers and cleaners.⁵⁰ Very few women work in technical occupations, such as masonry, carpentry or electricity.

Women join the sector in non-skilled occupations and often perform similar tasks until the end of their working life. A study measuring the intensity of work done by women in the construction sector in India revealed the hard tasks that women perform.⁵¹ The study found that women carry on average 9-12 bricks (each weighing 2.5kg) on their head along scaffolding. While performing earth work, women carry 15kg of mud on their head and walk 30 feet to deposit the mud and return. Performing the same task 180 times in an hour means that in an 8-hour shift, a woman would walk 13kms carrying 21,000 kg of mud. In the case of India there is a clear identification of occupations with gender, which makes it difficult for women to perform more skilled tasks.

Women generally are less recognised than male workers: they get lower pay, the rate of accidents for women is higher, and they are commonly sexually harassed. Employers generally consider them as mere helpers, and pay them less than male labourers.⁵² A survey of 2,600 construction workers in five cities of India found open inequality in pay with women earning 10-20 per cent less than men for similar work.⁵³ The physical hardships and their consequent effects upon women's health – especially to pregnant women and lactating mothers – are important issues. Carrying heavy loads up ladders and over uneven surfaces can cause spontaneous miscarriages as there is no provision of maternity benefits for women construction workers, or crèche facilities.

The risk of sexual harassment and abuse is higher for women contracted in infrastructure projects.⁵⁴ A report from Human Rights Watch found that female construction workers in Sylhet city Bangladesh described being economically exploited, verbally abused, and sexually harassed, mostly by co-workers or construction supervisors.⁵⁵ Women and girls living in communities receiving large influxes of male workers (contracted on large construction projects), also face increased risks of sexual exploitation and violence.⁵⁶

Women in most LICs are often unaware of their rights, or are scared to complain for fear of losing their jobs.⁵⁷ Women working and living in or around working sites away from their homes are potentially more vulnerable because of the lack of supporting networks.⁵⁸ Their living conditions are many times worse than non-migrant women in the sector, often with no water supplies or toilets, nor places to leave the children when they work. Bringing their children to worksites increases risks to safety as well as prevalence of child labour.

⁴⁸On the other hand, only about 1.4 per cent of women in India's construction sector work in technical positions such as engineers or architects. Source: Patel and Pitroda (2016).

⁴⁹ Kalpana and Kiran (2013)

⁵⁰ Jason (2005)

⁴⁷ Madhok (2005)

⁵² ILO (2001)

⁵³ Vaid, K.N. (1999)

⁵⁴ Fraser, Viswanath and Maclean (2017)

⁵⁵ Human Rights Watch (2014).

⁵⁶ World Bank Group President Jim Yong Kim (October 2016) in speech launching GGBV Task Force.

⁵⁷ ILO (2016)

⁵⁸ Fraser, Viswanath and Maclean (2017)

2.5 Child labour in construction supply chains

Worldwide, some 215 million children are in work, with more than 100 million children trapped in hazardous occupations.⁵⁹ Nearly half of all the working children are in the construction industry or sectors in its value chain, such as brick kiln, stone quarrying, wood, and forestry. Children are often forced to work for little or no wages, many times in life threatening conditions.⁶⁰ Most working children live in poverty and are forced into the workforce due to economic compulsions in order to help support their families or support themselves. In many cases children are forced into work by their parents or by employers or middlemen.

The United States Department of Labour maintains a list of goods and their source countries, which it has reason to believe are produced by child labour or forced labour in violation of international standards. Table 3 shows selected products relevant to the construction sector supply chain where there is presence of child or forced labour.⁶¹ It does not account for child and forced labour in the entire construction sector – which is present in many of the countries studied – it is only linked to specific products.

Table 3: List of goods produced by child labour or forced labour identified by the US Department of Labor

Country	Good	Child Labour	Forced Labour
Afghanistan	Bricks	Y	Y
Bangladesh	Bricks, Glass	Y	
Burma	Bamboo, Bricks	Y	Y
India	Bricks, Stones	Y	Y
Nigeria	Granite, Gravel (crushed stones)	Y	Y
Pakistan	Bricks	Y	Y
Sierra Leone	Granite	Y	
Uganda	Bricks, Stones	Y	
Zambia	Stones	Y	

Note: Child labour was not identified by the US Department of Labor in other DFID countries of focus.

South Asia has the highest concentration of working children labourers in the world, with more than one quarter concentrated in India where the brick kiln industry is one of the most important building material sectors. A health study on child labour estimated that brick kilns engage about 1.7 million children in India, at least 500,000 in Pakistan; 110,000 in Bangladesh.⁶² Another study from the ILO reported that 56 per cent of brick makers in Afghan kilns of two districts are children, with the majority being 14 years of age or under.⁶³ Interventions to reduce child labour in the construction supply chains could therefore concentrate in Afghanistan, Bangladesh, Burma, India and Pakistan, and to a lesser extent in Nigeria, Sierra Leone, Uganda, and Zambia.

Normally children are not directly employed by the brick kiln owners, but start helping their parents from as young as five years old. Other common tasks performed by children include preparing the soil, turning over cooked bricks, and creating brick piles. Wages are paid based on the piece-rate system and hence children continue to work as part of family labour to be paid higher wages based on the quantity of bricks they produce.

⁵⁹ ILO(2011a)

⁶⁰ BWI (n.d)

⁶¹ US Department of Labor (2017)

⁶² FPRW-IPEC (2014)

⁶³ ILO (2011b)

2.6 Skills and education levels

Education and training are essential to meeting the skills gap⁶⁴ in the construction industry.⁶⁵ They provide workers with the knowledge necessary to carry out their work and they increase employability. Training is also an important factor behind OSH improvements and increased labour productivity, which may in turn lead to higher wages.

Employers in DFID countries of focus such as Zambia, Malawi, Tanzania, and Mozambique report difficulties in finding skilled workers.⁶⁶ This is partly due to skills gaps and deficits, as training programmes are sometimes out of date and do not always meet the needs of the industry.⁶⁷ In most DFID countries of focus construction trades are taught in community and technical colleges, while construction-related curricula is less predominant in tertiary education. Challenges to the acquisition of skills include low levels of skills of trainers themselves, who in many cases do not have the adequate competencies to teach construction trades.

Skills gaps in developing countries vary from country to country, due to different technological patterns and employment structures.⁶⁸ The higher the technical requirements, the more important it is to have qualified workers. For instance, 83 per cent of the construction workforce in India are unskilled workers. According to the National Skill Development Corporation, the main skills gaps in India at the management level are at the planning stage, including weak capacity to estimate project costs.⁶⁹ At the technical level there is inadequate knowledge of specific tasks – such as lining, levelling and finishing skills in carpentry – and lack of knowledge about machine operation. Unskilled workers generally lack safety orientation, general workplace skills and the ability to follow technical instructions.

Construction companies operate in various locations. Since mobilising and transferring workers is costly, most companies recognise the importance of relying on the local workforce if the required skills and experience are available. When skilled workers are not available locally, it may be necessary to rely on expatriates, but differences in national vocational education and training systems may make the transfer of skills difficult. In many cases, there is a skills mismatch between internationally widely accepted qualification systems and national qualification systems.⁷⁰

Investment in skills may also be important to transitioning construction towards lower carbon and more sustainable industry practices to meet wider environmental and climate change goals. The demand for new skills lies across a range of environmental issues related to construction activities, including: the reduced consumption of energy, materials, and water; development of building scale energy systems; low carbon transport infrastructure; green housing development; waste minimisation; and pollution control.⁷¹

Green jobs may also be of higher quality than those they displace. The UNFCCC and the ILO have argued that taking action to mitigate climate change creates high-quality employment in the long run.⁷² There may also be social inclusion benefits as many green jobs are in the informal economy and / or accessible to lower tier workers. UNEP argues that the greening of economies is also a net generator of decent jobs: offering adequate wages, safe working conditions, job security, reasonable career prospects, and worker rights.⁷³

More efficient and cleaner construction approaches can support a shift from manual labour to pre-fabrication and on-site assembly, which not only creates higher skilled employment opportunities in the supply chain, but also can improve quality control.⁷⁴ A key issue is the lack of availability of a higher skilled workforce that

⁶⁴ A skills gap is the qualitative mismatch between the supply or availability of human resources and the requirements of the labor market.

⁶⁵ ILO (2015c)

⁶⁶ See for example ILO (2017a)

⁶⁷ See for example STEP (2016)

⁶⁸ ILO (2015c)

⁶⁹ National Skill Development Corporation (2009)

⁷⁰ ILO (2015c)

⁷¹ UNEP, 2008

⁷² Figueres and Ryder, 2012; OECD 2011

⁷³ UNEP, 2011

⁷⁴ See ARUPs support for Kindergartens in Ghana (Sabre Trust)

might underpin a shift towards a more efficient and safer construction sector, rather than continuing to rely on labour intensive and poor-quality methods.

Green jobs can also be promoted through the supply chain, by supporting the use of locally sourced renewable materials, providing opportunities for both skilled and unskilled labour. A key issue has been lack of investment in research, codes, and standards that support local forms of construction. The trend towards the greater use of concrete also creates environmental challenges (energy intensive production, embedded CO2, shortages of inputs).

Opportunities also exist to support safer and more resilient building construction and retrofit. For example, the World Bank’s Global Programme for Safe Schools has highlighted the need for comprehensive national repair and retro-fitting programmes, and shortfalls in institutional capacity required to ensure even relatively simple structures are built safely, operated, and maintained. Investment is needed to build the capacity of local SME contractors to undertake construction / repairs, which would generate employment opportunities locally. In Bangladesh, the collapse of the Rana Plaza was addressed through a major initiative led by the GoB supported by ILO, the Alliance and the Accord to survey large numbers of factories and carry out remedial measures to improve OSH (e.g. fire, electricity, structure).

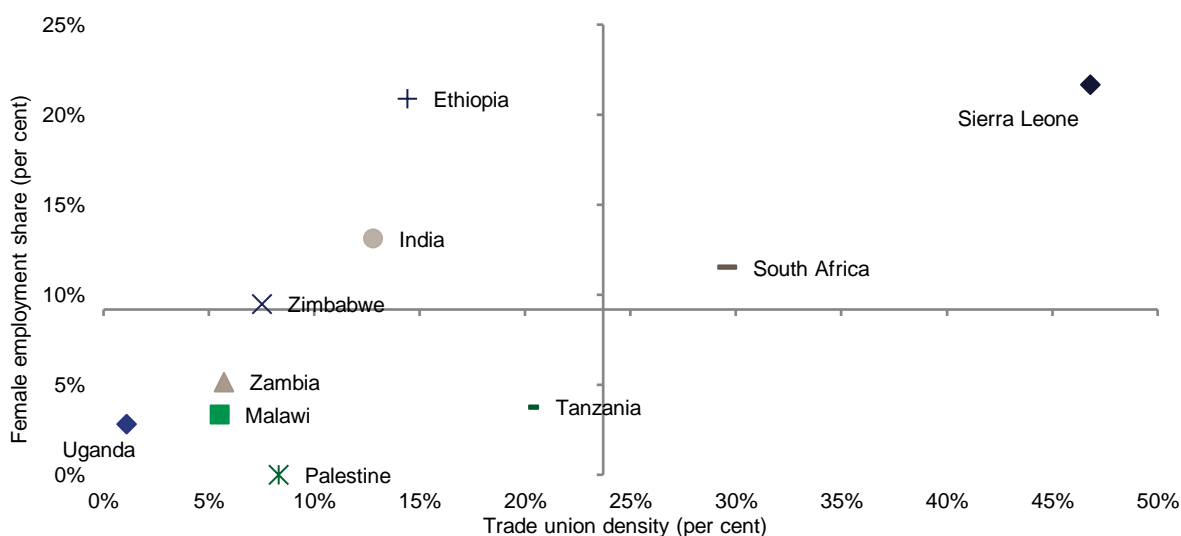
Employment opportunities also exist around the development of greater monitoring and compliance activities (e.g. Environmental and Social Impact Assessments) which in many DFID countries either don’t currently exist or are not adhered to, but which form a significant area of employment in more developed economies. There will also be an increased demand for environmental engineers and technicians.

2.7 Collective bargaining and union density

The right of workers to bargain freely with employers is important, so that workers can negotiate decent salaries and working conditions. Collective bargaining is a voluntary process through which employers and workers discuss and negotiate their relations, in particular terms and conditions of work. It can involve employers directly, or as represented through their organisations; and trade unions or, in their absence, representatives freely designated by the workers.

Figure 6 shows economy-wide union density in different DFID countries of focus. Union density differs widely from country to country.⁷⁵

Figure 6: Trade union density (x-axis) versus female employment share (y-axis) for DFID Focus Countries (latest year available)



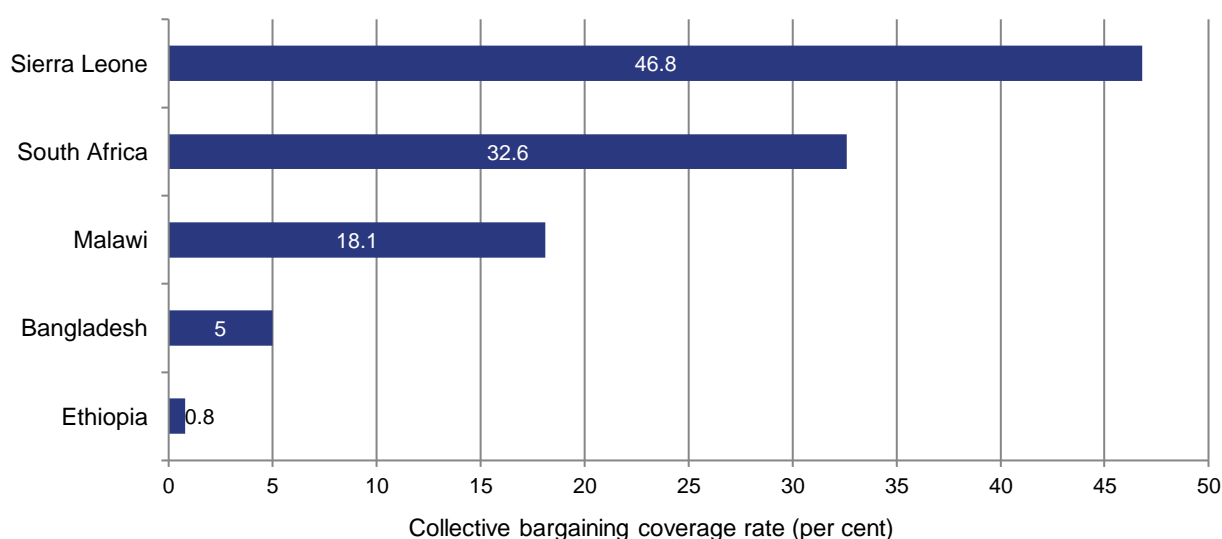
Source: ILOSTAT. Note: The vertical axis is set at 24% per cent, the world average trade union density. The horizontal axis is set at 9 per cent, the average female employment share for the sample available.

⁷⁵ Trade union density rate conveys the number of employees who are union members as a percentage of the total number of employees. For the purpose of this indicator in particular, trade union membership excludes union members who are not in paid employment (self-employed, unemployed, retired, etc.). Source: ILOSTAT.

Sierra Leone and South Africa are the DFID countries of focus with the highest union densities recorded: 46.8 and 29.6 per cent respectively. The other 7 countries for which union density figures are available have lower union density than the world average, 23.7 per cent.⁷⁶ Union density is particularly low in Uganda (1.1 per cent), Malawi (5.5 per cent) and Zambia (5.7 per cent). Union density of DFID countries is positively correlated with the level of economic output (GDP per capita) (0.30). This means that the richer a country is (in output terms), the higher union density it will likely have. Union density is also positively correlated with female participation in the sector (0.66). On the other hand, high levels of informal and casual worker and micro-enterprises are associated with lower levels of union density.

Economy-wide collective bargaining coverage⁷⁷ also differs widely among DFID countries of focus. The collective bargaining coverage rate conveys the number of employees whose pay and / or conditions of employment are determined by one or more collective agreement(s) as a percentage of the total number of employees. Data is only available for five of DFIDs countries of focus (see Figure 7). In Sierra Leone and South Africa, 46.8 and 32.6 per cent of workers are covered by at least one collective agreement. However, only 0.8 and 5 per cent of workers in Ethiopia and Bangladesh are covered by at least one collective agreement. In Malawi, the collective bargaining coverage rate is 18.1 per cent. Wider collective bargaining coverage is associated generally with economic development, urbanization, higher union density, and higher government intervention.

Figure 7: Collective bargaining coverage, latest year available



Source: ILOSTAT.

The structure of the industry in many DFID countries - a majority of informal and casual workers and micro-enterprises – is not conducive to collective bargaining and union density. DFID could more usefully promote social dialogue, associations of informal workers, and / or linkages between formal-informal workers.

⁷⁶ Union density was available for only nine DFID countries, including Ethiopia, Malawi, Occupied Palestinian Territory, Sierra Leone, South Africa, Tanzania, Uganda, Zambia and Zimbabwe. Source: ILOSTAT.

⁷⁷ Collective bargaining coverage includes, to the extent possible, workers covered by collective agreements in virtue of their extension. Collective bargaining coverage rates are adjusted for the possibility that some workers do not have the right to bargain collectively over wages (e.g. workers in the public services who have their wages determined by state regulation or other methods involving consultation), unless otherwise stated in the notes.

3 What are the opportunities for/barriers to scaling up quality employment in the construction industry in DFID focus countries?

Key Findings

- Potential ways to encourage transition to formality include the adoption of policy instruments facilitating the formalisation of Micro, Small and Medium-sized Enterprises, support workers to organise, including informal and casual ones, build links between trade unions and non-trade unions' organisations, and extend social protection floors
- Improving OSH is essential to scale up quality employment and reduce fatal and non-fatal accidents and diseases related to construction work.
- Potential opportunities for promoting equal access to decent employment for national workers include direct or indirect technical and financial support of inclusive business models and women cooperatives, and promote dialogue with other stakeholders.
- Efforts to eliminate child labour should be directed to the construction supply chain, and specifically to the brick making industry.
- Development and improvement of apprenticeship schemes can help existing barriers to youth assimilation into the labour market.

This chapter identifies the types of programming opportunities for scaling up quality construction employment for workers resident in DFID focus countries/regions. Interventions promoting decent work exist in all countries, but the chapter discusses where impact might be greatest based on the current market and governance profile. These reflect policy recommendations from a global construction policy dialogue (in which governments, and employer and worker representatives took part), approved by the Governing Body of the ILO.⁷⁸ The chapter concludes by reviewing potential barriers to successful programme implementation (market and political economy) and explores how different programmes have engaged to overcome these.

Several programming priorities can be identified to address the challenges set out in Chapter 2, each of which may be of differing importance dependent on the market dynamics of the country. These are:

- ***Interventions that support transitioning to formality so that workers are sufficiently (in law and in practice) covered by formal arrangements (e.g. written contracts).*** This would make sense in countries with large informal sectors and large expected employment growth. E.g. India, the Occupied Palestinian Territories, Pakistan, Tanzania, Zambia and Uganda have high levels of informality.
- ***Harnessing the benefits of foreign participation.*** Policies can be implemented to take advantage of the benefits of foreign participation in the sector in terms of skills transfer and knowledge spillovers.
- ***Addressing construction health and safety.*** This is most needed in countries with high mortality rates among construction workers. Interventions in this area would improve not only the working conditions in the sector, but also the productivity and overall profits of contractors. Most DFID focus countries have poor (and often underreported) OSH outcomes. Some exceptions include Kyrgyzstan and South Africa.
- ***Promoting equal access to decent employment for national workers (including women).*** It is important to implement a pro-poor approach. Countries with high expected (female and total) employment growth include Kyrgyzstan, Myanmar, Yemen, Pakistan, Uganda, Afghanistan, Tanzania, Sierra Leone, Ethiopia, Liberia, India, Bangladesh, South Africa and Nepal.

⁷⁸ ILO (2015c) Points of consensus. Opportunities and challenges faced by the construction sector in promoting decent work and productive employment, specifically in areas such as employment relations, occupational safety and health, and vocational education and training, 19-20 November 2015.

- **Interventions to reduce child and forced labour in construction supply chains.** These are most needed in countries with high incidence of child labour in the brick making sector, among others. Reducing child labour would increase general levels of education and long-term health and livelihood benefits for children. Countries with highest numbers of child workers in the construction industry include Afghanistan, Bangladesh, Burma, India, Nigeria, Pakistan, Sierra Leone, Uganda and Zambia.
- **Skills and education development.** This could improve employment outcomes in most countries, but would achieve maximum results in DRC, Zambia, Malawi, Tanzania and Mozambique.

Each of these is explored in turn below.

3.2 Supporting transition to formality

The construction sector in DFID countries of focus is characterised by high degrees of informality, as described in section 2.1, with irregular work, frequent non-payment of wages and the widespread participation of unscrupulous intermediaries. Bureaucratic formalisation procedures are one factor impeding formalisation of employment in construction, especially for micro-enterprises. Low levels of education and poverty also drive high levels of informality. Although employment arrangements such as temporary or part-time jobs assist with the industry's adaptability and flexibility to respond to growth opportunities, governments and relevant stakeholders should work to ensure the effective protection of workers.

Interventions promoting transition to formality work best in countries experiencing increased turnover in the construction sector. Increased turnover directly generates employment growth, which means that countries that have high expected employment growth have higher potential when implementing formalisation programmes. Countries with high incidence of informal employment, and also high expected employment growth are India, the Occupied Palestinian Territories, Pakistan, Tanzania and Zambia. Other DFID countries of focus may have high incidence of informal employment but unfortunately data was not available for all.

Potential ways to encourage transition to formality include:

- **Adoption of policy instruments facilitating the formalisation** of Micro, Small and Medium-sized Enterprises, compliance and strong enforcement of the law, and effective social dialogue with social partners. In some countries with high formalisation costs, programmes can focus on working with government institutions to simplify the procedures to formalisation and reduce the costs, should there be a barrier to formalisation.
- **Support workers to organise**, including informal and casual ones, and build links between trade unions and non-trade unions' organisations.⁷⁹ In countries with a strong civil society, formalised institutions can help in the aggregation of members, and in this way reduce informality.
- **Extend social protection floors** to mitigate the possible negative impact of flexible work arrangements on incomes. Informality is many times associated with negative working conditions, including a poor OSH record. Social protection interventions can be combined with other formalisation interventions to help protect against such negative outcomes.
- **Licensing intermediaries and gangmasters** to ensure that they follow appropriate standards, pay wages due to workers, and increase accountability and transparency in the labour supply chain, potentially drawing upon the model of the Gangmasters Licensing and Abuse Authority in the UK.

Challenges to promoting the formalisation of employment include underfunded and inadequate labour enforcement institutions, high corporate taxes and bureaucratic mechanisms, and low company performance. These affect all DFID countries of focus to a greater or lesser extent except Sierra Leone, Uganda and Myanmar. Interventions supporting social partners such as trade unions and civil society organisations are only effective when low productivity issues are addressed. In many DFID countries formalisation is hampered by excessive formalisation costs (including licenses and taxes) and sometimes unclear administrative procedures to register a business.

⁷⁹ ILO (2013b)

3.2 Harnessing the benefits of foreign participation

Potential ways of harnessing the potential benefits of foreign participation in the sector in terms of skills transfer and increased local employment include the following:

- Skills development for the national workforce, including women and other vulnerable groups.
- Raising the awareness of main contractors about the need to engage local sub-contractors.
- Promoting cooperation between foreign and national contractors, through the organisation of sector conventions, conferences and workshops.
- Approval and enforcement of anti-trust policy tools and transparency measures to increase competition among contractors.

In public works commissioned by national, regional and local governments:

- Use of labour-intensive techniques. The use of labour-intensive techniques can be promoted in order to increase the general labour demand for construction. Such techniques typically increase the demand for low-skilled workers which are likely to be nationals.
- Breakdown of contracts to enable the participation of SMEs. In many cases MSMEs do not have the managerial, human and financial capacity to participate in large infrastructure tenders. By breaking down construction contracts local enterprises can increase their participation in public works.
- Instalment of quotas on the engagement of unskilled foreign workers. Governments can include provisions when selecting a specific tender offer.
- Preference for using local materials. With the obligation of procuring locally, local employment related to material production and transformation can be generated.
- Inclusion of business and social provisions in public procurement processes requiring a minimum engagement of national contractors, local workers, quotas for women, or specific working conditions.

BOX 2: Promoting decent work through public procurement

In 2006 the World Bank's executive board adopted the new IFC Policy and Performance Standards on Social and Environmental Sustainability and started to apply them to all new IFC loans and investments.⁸⁰ In addition to making observance of Core Labour Standards (CLS) an obligation for all projects, the IFC's "Performance Standard 2: Labour and Working Conditions" (PS 2) requires that borrowers meet other basic labour conditions in relation to human resources management, retrenchment, OSH, and supply chain management. These clauses were applied when IFC financed the construction of the Bujagali Dam in Uganda. Between 600 and 2000 construction workers worked on site during the different stages of construction, including approximately 400 migrant workers from neighbouring countries.

Thanks to the involvement of the global construction trade union (BWI), site union organisers were trained, and safety and health committees were created and trained. Additionally, there were visits to large construction sites for practical inspections, and interviews with management and workers to improve OSH outcomes. More generally, workers received OSH training and related equipment at the workplace.

When designing social provisions in public procurement, these normally limit the responsibilities to the first-tier contractor. However, subcontracting and outsourcing provisions are increasingly included in public procurement contracts on an ad hoc basis and generally place obligations on both contractors and subcontractors.

Another example of an international instrument that can promote local employment through the inclusion of labour clauses in public contracts is the ILO Labour Clauses (Public Contracts) Convention, 1949 (No. 94).⁸¹ The Convention obliges national procurement authorities to include the protection of labour rights

⁸⁰ Murie (2009)

⁸¹ The Labour Clauses (Public Contracts) Recommendation, 1949 (No. 84), further clarifies the provisions concerning wages and working time.

in their public tender process. These provisions should guarantee wages, hours of work, and other working conditions at least equal to those normally observed for the kind of work in question in the area where the contract is executed.

Further information can be consulted in the *Labour clauses (public contracts) Convention, 1949 (No.94) and Recommendation (No.84)* http://www.ilo.org/wcmsp5/groups/public/@ed_norm/@normes/documents/publication/wcms_099699.pdf

3.3 Addressing construction safety and health

Improving OSH is essential to scale up quality employment and reduce fatal and non-fatal accidents and diseases related to construction work. Compliance with health and safety laws in the sector is principally the responsibility of employers, and workers have the responsibility to cooperate with arrangements put in place by the employers. Although there are numerous OSH deficits and compliance is low in most DFID countries, interventions that address OSH problems could be implemented in countries which are experiencing increased construction activity, as fatality rates increase in boom cycles (see section 2 for more information).

Potential policy options to address health and safety in the construction sector include:

- Enhancing compliance with health and safety laws in the sector by supporting effective, transparent and adequately resourced labour inspection systems.
- Capacity building of labour inspectors in sector specific competencies.
- Improving OSH governance mechanisms by implementing tripartite committees at the national and sectoral levels.
- Supporting workplace prevention measures by supporting health and safety workers' representatives and setting up joint health and safety committees.
- Capacity building in OSH on small working sites with training programs such as WISCON.⁸²
- Raising the awareness of main contractors about the relevance of labour standards and their importance in supply chains.
- In resource-constrained contexts with high degrees of informal employment, rotating OSH compliance teams to improve awareness of health and safety compliance.

3.4 Promoting equal access to decent employment for national workers (including women)

The construction sector plays a vital role in the economic development of countries and workers alike. As a labour-intensive sector, it has the potential to create employment and generate wealth. The industry is rapidly evolving due to changes in employment relationships and industrial structure, increasing urbanisation, the declining role of the public sector as an employer, expansion of international contractors, migration trends and environmental challenges. Interventions addressing female employment conditions should be implemented in countries where women are suffering poor working conditions. Programs implemented in countries with low female participation yet expected high employment growth can take advantage of the change in the sector status quo. Countries with high expected female employment growth include Myanmar, Yemen, Pakistan, Uganda, Afghanistan, and Tanzania.

Potential opportunities for engagement include.

- Direct or indirect technical and financial support of inclusive business models and women cooperatives.
- Enhancing business development services supporting the creation and growth of local companies.
- Cooperation with women's rights organisations to support engagement in the sector and promote dialogue with other stakeholders.

Interventions directed to improve national employment and women's participation face a series of challenges. In South Africa, high income differences with its neighbouring countries attract large amounts of

⁸² ILO (2003)

undocumented migrants working in unskilled occupations, limiting the employment of the local workforce. The relationship between women and foreign participation should be further studied.

BOX 3: Training self-employed women in the Indian construction sector

An example of a replicable intervention promoting women's participation and skills improvement in the Indian construction sector is that of the Self-Employed Women's Association (SEWA). The Association has been striving to improve the employability, productivity, and working conditions of self-employed women workers through training courses that teach women workers about new state-of-the-art technology used by multinational construction companies. The training courses not only enhanced the quality of life and raised the economic strength and productive efficiency of women, but also increased their bargaining power. Around 30 per cent of the women who had previously engaged in unskilled occupations became helpers to masons as a direct result from the training, and 20 per cent became masons themselves. Around 20 per cent of the women also perceived a 70 per cent increase in their daily wage.

Since 2003 they have been taught at the Karmika School for Construction Workers in Gujarat. Following the success of the training, it has been extended to other Indian regions, and managed to train more than 6000 construction workers, 90 per cent of them being women.

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

3.5 Eliminating child and forced labour in construction supply chains

The global number of children in child labour has declined by one third since 2000, from 246 million to 168 million children; but there is still a long way to go. In order to maximise outcomes, efforts to eliminate child labour should be directed to the construction supply chain, and specifically to the brick making industry. Afghanistan, Bangladesh, Burma, India, Nigeria, Pakistan, Sierra Leone, Uganda and Zambia have reportedly high amounts of child and forced labour. Potential paths to eliminate child and forced labour are:

- Strengthening training and education institutions to increase children's access to public education.
- Supporting labour inspection systems and companies to identify child labour.
- Implementing and supporting fair trade or labelling initiatives.
- Promoting global labour standards on child and forced labour in trade agreements.
- Supporting collective bargaining strategies such as Global Framework Agreements.⁸³

Existing challenges to the reduction of child labour include governmental resistance to policy change due to vested interests and pressure from organised groups of child workers.

3.6 Skills and education development

Investing in education and training is vital to closing the skills gap, increasing productivity, and improving OSH compliance. Impacts are maximised in situations of high employment growth as the need for construction skills is higher. Countries like Bangladesh, India, and Pakistan have addressed the topic of skills development but African countries such as DRC, Zambia, Malawi, Tanzania and Mozambique are increasingly trying to address skills shortages in the construction sector. In countries such as India, Malawi and Zambia, Community Technical Colleges teach technical occupations such as plumbing and carpentry. Development and improvement of apprenticeship schemes can also help existing barriers to youth assimilation into the labour market. Improving workers skills is challenging when dealing with child labour or informal workers, as these groups cannot access skills development programs. This could potentially be an area for DFID engagement. Additionally, lack of resources and limited enterprise size limits on-the-job training in many cases.

⁸³ Global Framework Agreements are agreements between MNEs and global union federations representing workers at the global level by sector of activity.

Potential areas for DFID involvement are:

- Supporting capacity development of selected construction training institutions.
- Supporting the development of construction development curricula.
- Enhancing skills and competency levels of lecturers in training institutions through exposure to good practice.
- Improving dialogue and collaboration between policy-level organisations, industry and training institutions to enhance needs-based skills development.
- Supporting training institutions and key sector players to design and implement demand-led training programmes, perform regular training needs assessments and tracer studies.⁸⁴

3.7 Overcoming barriers to successful implementation

This chapter has set out several programming areas where DFID might engage, building upon the challenges identified in Chapter 2. However, successful programming requires an understanding of why some programmes are successful and other fail given a range of market and political economy challenges.

Programming interventions often occur against countervailing trends that undermine efforts to encourage structural reform within construction sector employment. Some of these trends include:

- ***Increasing cost pressures:*** Public budgets for construction remain under pressure in most DFID-focus countries due to a narrow revenue base and competing spending priorities (e.g. social welfare, health, education). The use of more competitive procurement practices and cost-benchmarking in public sector construction contracts is also driving lower cost provision. A reduction in costs often is accompanied by lower social and environmental standards where these are not properly enforced. Private sector developers are likewise driven by a competitive environment that prioritises cost minimisation, and which often operates under weak compliance and enforcement systems. This combination can often result in social safeguards being absent in construction projects and across the wider supply chain.
- ***Increasing informalisation:*** Linked to the above, there is a growing trend towards declining formalisation of employment contracts, despite ongoing efforts to promote better practice by ILO and others. Whereas in LICs, the majority of workers have always been informally employed, the number employed on formal contracts has also declined in both the public and private sectors. Perceptions of increased flexibility, and lower levels of costs / bureaucracy can engender negative perceptions of employment rights, collective bargaining, and greater formalisation.
- ***Increasing oversupply of unskilled labour:*** High levels of youth unemployment and migration mean that construction firms often have access to large pools of lower-skilled labour. This not only depresses wages, but can encourage an ongoing reliance on less efficient and more dangerous approaches to construction, rather than investing in higher skilled or more capital-intensive approaches that use increased mechanisation or pre-fabrication.
- ***Ongoing capacity and knowledge deficits:*** There remain basic knowledge and institutional capacity gaps in relation to how to organise and promote good practice in construction employment, including around OSH. The lack of good practice can create uncertainty among construction firms and policy makers as to whether the introduction of new legislation and / or more robust enforcement will damage economic activity by raising costs or exclude informal and poor communities from a valuable source of income.

⁸⁴ Aimed at ascertaining the employability of graduates, tracer studies provide information on the medium and long term effects on employment of their programs, and reveal which programs and approaches help students perform better in the labour market.

As a result, there are significant barriers to delivering successful interventions. A number of lessons can be learned from ex-post evaluations of construction labour interventions that are critical to underpinning the delivery of value (i.e. moving from the 'what should be done' to 'how it should be done').⁸⁵ These include:

- Engagement with high-level stakeholders (particularly to support regulatory reform and / or the adoption of voluntary best practice).
- Focussing efforts in a small number of high impact initiatives (to build visibility and trust).
- Engaging with both workers and private sector employers to ensure that incentives are aligned and that proposed solutions are acceptable.
- Anchoring initiatives in larger scale construction capital investment projects (to ensure economic viability, labour demand and skills relevance).
- Adopting a market supply chain based approach that looks at skill sets beyond pure construction labour, thereby supporting sector viability. Again, strong political economy approaches and robust stakeholder analysis are important.

BOX 4: Lessons learnt from ILO programmes

The *Zambia Green Jobs* programme (2013-17) was created as a way of promoting sustainable development, while delivering economic benefits through the construction industry due its high labour intensity, low entry barriers for semi-skilled and unskilled labour, and high concentration of MSMEs.⁸⁶ It also offered a framework to address social welfare issues within the sector (accidents, injuries, ill health and lack of associated social protection safety net). To be successful, the programme identified the participation and commitment of high-level stakeholders as critical to underpinning transformational change at sector level, particularly around both regulation and voluntary adoption of best practices. This was done through various interventions including advocacy messages on mindset change, demonstrations with private sector partnerships, as well as skills and technology development with technical and vocational training centres and universities.

Also important was the adoption of a market systems development framework and value chain approach to ensure that potential solutions were acceptable to all participants, and took into account different interests and incentives. For that reason, it collaborated with a wide range of stakeholders (government ministries and agencies, financial institutions, business development service providers, associations of small- scale contractors and other private sector players) in Zambia's building construction industry. Of particular value was anchoring the project around large-scale capital investment projects (e.g. mine related housing schemes) and building the market linkages to suppliers, i.e. connecting the investment projects with green MSMEs with whom the project was already working and addressing concerns for collaboration. The programme recognised that an integrated approach, combining policy, finance and business development services was likely to be more effective than a single intervention.

Another example is the *Facilitating Formalization of Informal Economy in South Asia* programme (2012-2017).⁸⁷ The programme supported formalisation efforts in the construction sector in both Bangladesh and Nepal. Among other elements, the programme addressed inclusion through promoting equal wages for men and women undertaking similar work in the construction sector, and promoting female entrepreneurship opportunities to bypass barriers presented by male dominated supervision and management bureaucracy. Among key success factors identified for delivery of the project were the need for high-level political engagement (particularly around creating the regulatory and business enabling environment); and the need to work with strategic partners on visible and high impact initiatives to build and create trust across the sector. Their inclusive approach that recognises / involves both workers and private sector partners to ensure that incentives between employers and employees are clearly aligned also contributed to the success of the programme.

⁸⁵ ILO Green Jobs Programme (2015) and ILO (2017c)

⁸⁶ ILO Green Jobs Programme (2015)

⁸⁷ ILO (2017c)

4. Would investing in strengthening the construction industry and creating / improving the quality of jobs in the construction industry create good value for money (VFM) for UK Aid?

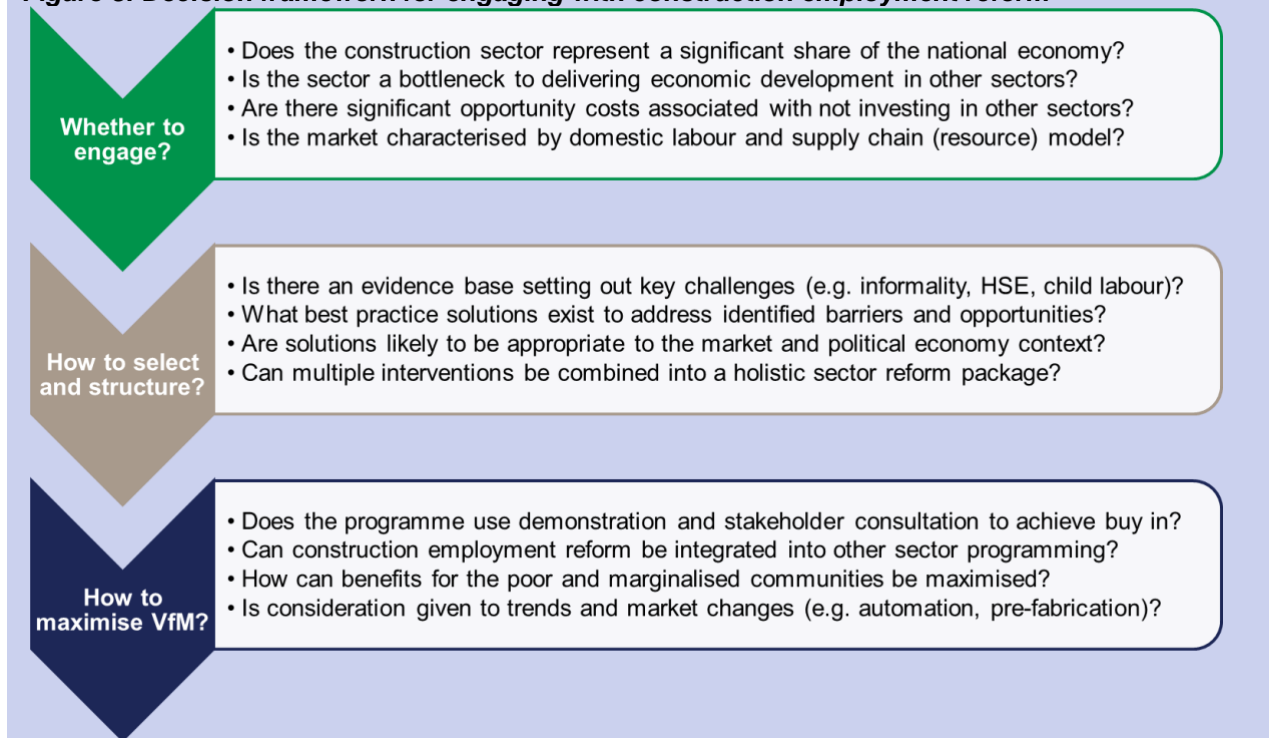
Key Findings

- The report finds that support for the construction sector can provide significant benefits in terms of economic and employment effects, and potentially greater than those available in other sectors. A recent study estimated total economic multipliers in high- and middle-income countries to be greater than 3:1, based on direct, indirect and induced economic outputs (ILO 2015e). In the same study, employment creation was estimated at 158 jobs per million US dollars invested in a sample of middle income countries.
- Core economic value derives from the development, renovation, repair or extension of fixed assets (buildings, land improvements, engineering assets). However, the construction sector also has significant backward and forward linkages. Supply chain benefits can include the development of input industries, including cement, steel, paints and chemicals, glass, timber and machinery, alongside construction services, planning and design, finance, enforcement. The construction sector also has forward linkages, underpinning economic development in other sectors, including transport, housing, power, water, waste and telecommunications;
- Within the construction sector, there are also potentially significant economic benefits associated with construction employment reform (addressing informality, health and safety standards, female and child participation, issues around capacity and collective bargaining). These can hinder effective sector development and impose high social welfare costs on governments and wider society. Addressing them can also improve the economic efficiency of the delivery model itself;
- When designing programmes, care should be taken to ensure that the construction sector and associated employment issues are a) significant within the country context (i.e. well evidenced); and b) significant in relation to other sectors (i.e. there is no opportunity cost associated with intervention). Efforts should be made to understand whether the construction sector supply chain is dominated by import-based (labour or materials), as this may reduce the efficacy of sector interventions or require different types of programming;
- Costs and benefits can be identified through standard cost benefit analysis (CBA) undertaken as part of a business case development process. Key benefit drivers might include avoided loss of life and injury, increased productivity (e.g. from improved training or greater inclusion), and enhanced job creation in the supply chain. However, there is very limited evidence in the literature of formal cost benefit analysis having been undertaken on construction sector employment reform programmes to date;
- Maximising value for money in construction and associated employment interventions is highly dependent on the quality of programme design and delivery. Interventions should be evidence-based, clearly aligned with market weaknesses, and where possible integrated into a holistic programme of sector reform. Interventions should also be sensitive to market and political economy realities (e.g. around collective bargaining or female participation);
- There may be resistance to change due to concerns around the social and economic costs of migrating from established sector models. Scale up of reform is most successful when it builds upon successful demonstration models and consultation processes that help secure buy-in from public and private authorities. Programmes are also successful when integrated as a sub-component into sector investment and reform programmes (e.g. housing, transport);

- Consideration should be given to emerging labour market and technology changes in the construction sector (e.g. moves towards automation, pre-fabrication), which have the potential to improve the efficiency but also potentially change or reduce the nature of labour force participation. Labour intensity during construction may therefore reduce over time, but be displaced into supply chains and manufacturing. This may determine the focus of an intervention (e.g. engaging with upstream supply chains).

Figure 8 sets out some of the questions that should be considered during the design and delivery of construction employment programmes.

Figure 8: Decision framework for engaging with construction employment reform



4.1 Approach

This chapter explores whether and how investing in strengthening the construction industry and creating / improving the quality of jobs in the construction industry might offer good value for money (VFM) for UK Aid. It synthesises the lessons of the earlier chapters, and further explores the potential benefits and constraints of improving construction industry employment from a socio-economic perspective.

Firstly, the chapter looks at the evidence for economic returns on interventions in the construction sector and associated labour markets. This includes a review of macro-level economic and employment multipliers from the construction sector in middle and low-income countries.

Secondly, the chapter sets out how value for money might be assessed within a business case process using cost benefit analysis, recognising that there are currently few available studies or benchmarks available in the literature for construction employment interventions.

Thirdly, contingent factors that may potentially influence the success of interventions are explored. These include the role of imported labour and resource models (potentially reducing the opportunity to engage in country), and emerging trends in the supply chain (automation, pre-fabrication) which may impact upon patterns of labour intensity and productivity.

Finally, a set of decision guidelines is set out for helping programme design teams and donor agencies consider VFM in their programme design processes and funding decisions.

4.2 Returns on investment from construction sector programming

A review of the literature indicates that while there is relatively robust evidence of potential programme outcomes (e.g. in terms of job creation, improved regulation) from construction employment interventions, there have been fewer attempts at a programme level to understand the socio-economic returns on investment (ROI) in construction sector employment programming (e.g. through traditional cost-benefit analysis). The literature does, however, identify several potential macro and micro-level benefits associated with expanding the scale and / or increasing the efficiency of the construction sector, of which improving labour practices is a core element.

Economic (output) effects

The construction sector continues to play a key role in economic development in developing countries, driven by increasing population levels, urbanisation trends, the need for new housing and transport infrastructure, and reductions in poverty levels / higher levels of consumption.⁸⁸

In the short run, economic benefits from construction are associated with the (Keynesian) stimulus effects that arise from high levels of capital investment and associated labour inputs. These direct effects are associated with the creation, renovation, repair or extension of fixed assets (buildings, land improvements, engineering assets).

However, the construction sector has strong forward and backward economic linkages. One recent study finds that construction is among the top 4 of 20 economic sectors in terms of its inter-sectorial linkages and effects.⁸⁹ Another study on the sector in Turkey identifies more than 200 subsectors that have economic linkages with construction.⁹⁰

In terms of backward linkages, the construction process needs inputs from other industries and production factors (labour, land and capital).⁹¹ Supply chain benefits can include the development of industries, including cement, steel, paints and chemicals, glass, timber and machinery, alongside construction services, planning, design and finance.

In terms of forward linkages, as economies develop from LIC status, construction sector spillovers accrue to support productivity in other sectors of the economy, such as in the services sector including retail, commercial, housing, recreation, health services.⁹² Downstream sectors benefit from improved access to and quality of buildings, transport, power, telecoms, water, waste and other services. In addition, there are increased opportunities for public revenue collection and investment (e.g. land value tax, formalisation, and corporate taxes) as well as from the development of ancillary services (design, finance, infrastructure services) which can support other sectors of the economy.

There is evidence of a very strong relationship between construction activity and economic growth. Some studies in developing countries suggest that this relationship is causal (i.e. with investment in construction causing economic growth).⁹³ Others conclude that the relationship is rather correlated (i.e. construction activity reflects wider rates of economic growth and development).⁹⁴

There are developing country studies that explore the relationship between the construction sector and economic growth. Several studies (in Ghana, Indonesia, Palestinian territories) conclude that construction has relatively high economic multiplier effects compared with other sectors of the economy due to these forward and backward linkages.⁹⁵

⁸⁸ ILO (2015c)

⁸⁹ Dang and Low (2011)

⁹⁰ Coban et al. (2015)

⁹¹ Wibowo (2009)

⁹² Coban et al. (2015)

⁹³ See Ramachandra T., & Rameezdeen R. (2006)

⁹⁴ Dlamini (2012)

⁹⁵ See Osei (2013), El-namrouy (2012), Wibowo (2009) respectively

The most comprehensive analysis is a 2015 ILO study⁹⁶ that reviewed the economic output potential within the construction sector. It found that, on average, across direct, indirect and induced effects, investment in the construction sector was likely to result in marginally higher economic output than comparable investment across the economy as a whole. On average, between 1995 and 2009, the multiplier for construction was 13 per cent higher than that of the overall economy. The study estimates that the economic output multiplier of the construction sector in middle income countries (MICs) was 3.45 in 2009 (i.e. for each additional million dollars spent, the construction sector would have generated an expansion of gross output 3.45 times larger), although it notes that this multiplier figure has been decreasing (marginally) over time.⁹⁷ Of 5 LIC/LMIC countries included in the study, economy multipliers in 2009 ranged between 3.5 and 5.3 with an average multiplier of 4.4.⁹⁸ This suggests that multipliers are overall slightly higher in lower income countries. However, the data sets are smaller and therefore it is difficult to draw clear conclusions.

There are potentially several reasons why the economic multiplier tends to be higher in the construction sector compared with other sectors. These include the relatively low level of imports, the heavy reliance on an extended and varied supply chain, and the relative high levels of labour intensity – which induces domestic consumption. The implication is that improvements to the quality and efficiency of labour within this supply chain can potentially deliver higher economic returns than similar interventions in other sectors.⁹⁹

In relation to other sectors, the observed multiplier effect is, however, greater in higher and middle-income countries than in LICs.¹⁰⁰ In LICs, the construction sector ranked between 3rd and 9th place out of 24 sectors reviewed.¹⁰¹ The lower ranking in LICs is perhaps reflective of the greater reliance on imported materials and other non-labour inputs, and a less developed domestic manufacturing supply chain. This also feeds through into lower levels of indirect employment effects (see below). This can be addressed by supporting the promotion of supply chains alongside direct engagement with the construction sector itself.

LICs tend to have less developed infrastructure (and therefore construction sectors) than other countries. Evidence indicates that during early stages of development, construction output tends to increase quicker than overall GDP, but that this growth then slows as countries become wealthier (typically when the share of Construction Value Added (CVA) reaches 5-6% of GDP), after which construction output tends to grow in line with overall economic development. The type of support given to construction might therefore change depending on the development pathway, with an initial focus in LICs on projects with high multipliers such as transport and multi-purpose (e.g. power and water), or regional infrastructure.¹⁰²

Investments in the productivity and efficiency of the labour contract also have the potential to underpin the economic output of the construction sector, through the delivery of quicker construction times (and acceleration of forward benefits to end users), lower costs of infrastructure delivery (quicker / more efficient labour pool, management), higher quality of infrastructure provision (e.g. due to improved training and methods), and improved worker conditions (e.g. higher wages, better and safer conditions, lower injury rate).

There is some evidence that investment in more labour-intensive approaches (e.g. the use of local unskilled labour in road construction or public works programmes) has the potential to deliver higher economic returns within the local economy due to higher wages and increased consumption, with GDP and income effects more than 2-3 times that of equipment based approaches. This also has the potential to raise state taxes to fund improved public services.¹⁰³ However, such programmes are subject to risks such as non-payment of higher wage costs and lack of funding.

Construction sector interventions also have the potential to directly address social welfare and pro-poor economic development, which can in turn support a range of better outcomes (e.g. education, health, stability). For example, an ILO study on Employment Intensive Investment Programmes (EIIPs) reviewed the

⁹⁶ ILO (2015e)

⁹⁷ ILO (2015e)

⁹⁸ Countries included were Morocco, Niger, Paraguay, Sri Lanka and South Africa

⁹⁹ Watts Bulletin (2010)

¹⁰⁰ ILO (2015e)

¹⁰¹ Ibid. Sectors with higher output multipliers than construction in LICs not provided.

¹⁰² Lopes, Oliveira and Abreu (2011)

¹⁰³ ILO (2015f)

opportunity for integrating women into public works labour programmes and found that pro-active engagement on gender mainstreaming had a number of positive economic consequences, including entrepreneurship development, the provision of start-up capital for micro-businesses, income enhancement and diversification, and improved household education and healthcare outcomes.¹⁰⁴ The evidence suggests that pro-active engagement with inclusion is essential to counteract traditional gender and social models of employment.

Another study on the potential returns on labour intensive large scale public works programmes in South Africa found that the distributional effects of economic stimulus would be strongly weighted towards poor households (9.2% increase in incomes) compared to non-poor households (1.3% increase).¹⁰⁵ The ILO managed Roads for Development (R4D) program in Timor Leste found that wages paid to local workforce represented between 15 and 25% of the total project cost and that these funds were well distributed among different socio-economic groups and primarily reinvested in local economic activity.¹⁰⁶

However, there may be potential trade-offs between using construction sector programmes as a social policy tool (i.e. to maximise benefits to local livelihoods or capture value in local economies) and the overall economy efficiency of construction (e.g. in terms of cost and quality of output). Whilst labour-intensive programmes may be more effective at delivering social and economic benefits in the local context, they may not be as economically efficient from a service delivery perspective and may limit opportunities for market and supply chain development. Programmes therefore need to be clear about to what extent equity and social development is a primary consideration, and whether such approaches are likely to maximise the growth benefits for the wider economy.

Employment effects

The construction industry provides a very important contribution to the national / local economy through its job generating ability for unskilled, semi-skilled, and skilled labour. However, it is also clear that structural barriers in construction employment markets may contribute to the sector not fully maximising its economic and employment potential. These include skills shortages within the domestic labour market, barriers to female participation, and negative perceptions among the young in relation to careers within the industry.¹⁰⁷

The job creation potential of investment in the construction sector is higher in lower income countries than in others, reflecting the lower levels of automation and lower labour costs. For example, the ILO estimates that a million dollars of investment in the construction sector in Higher Income Countries (HICs) would result in the equivalent of 24 jobs (direct, indirect and induced), compared to 158 jobs in MICs. Employment multipliers for LICs/LMICs are still much higher. A small sample of 5 countries indicated an average of 635 jobs per million USD of investment, with individual countries ranging from 45-2,322 jobs created¹⁰⁸.

However, the employment potential of the construction sector has been declining rapidly over recent years, suggesting trends towards lower levels of labour intensity and the increasing cost of supporting job creation efforts.¹⁰⁹ For example, employment multipliers for middle income countries were estimated at 542 jobs per million dollars in 1995, indicating a reduction of almost 70% over the period to 2009 in the labour creation potential of the sector. These trends are set to continue with an increase shift towards automation and pre-fabrication. It should be expected that these downward trends will be mirrored in LICs and LMICs graduate towards higher income status. This creates challenges for the use of construction programmes to deliver job creation in a sustainable way over time.

Multipliers can be expected to be higher in more labour-intensive projects which tend to be implemented by more unskilled labour in low income areas, with a greater level of consumption within the domestic economy, higher backward linkages (e.g. lower export linkages) and higher levels of indirect induced job creation.¹¹⁰

¹⁰⁴ ILO (2015g)

¹⁰⁵ Antonopoulos (2009)

¹⁰⁶ ILO (2017b)

¹⁰⁷ ILO(2015c)

¹⁰⁸ Countries included were Morocco, Niger, Paraguay, Sri Lanka and South Africa – ILO (2015e)

¹⁰⁹ ILO(2015e)

¹¹⁰ ILO(2015f)

Employment effects can vary significantly depending on the level of mechanisation. For example, one study assessed the average unskilled labour content of equipment based road works as 1% of total costs, compared to 37% for labour-based works (5000 unskilled workdays per km vs 200 workdays on equipment based operations).¹¹¹

However, the ILO also finds that the employment output effects of investment in the construction sector in LICs are lower relative to economic output effects. The ILO estimates that construction ranks in the second quarter of sectors for employment creation behind more labour-intensive industries, including food and beverage, textile, wood, education and health, hotels and restaurants.¹¹²

The reasons why LIC employment multiplier effects of investment in construction are lower are not entirely clear, but this may be related to the lower level of development and capacity within the sector in LICs (particularly within supply chains where imported resource models prevent supply chain expansion alongside an increase in construction activity). Nonetheless, employment multiplier effects do seem to be correlated with the level of economic development, and there may be a need to invest in construction sector infrastructure and labour productivity.

The ILO concludes that the economic and employment effects vary by sub-sector. Capital intensive investments (e.g. highways, airports, buildings) may have higher economic output effects, whereas investment in irrigation, district or tertiary roads are more labour intensive. They conclude that there is a need to balance support for these sectors in LICs, and that opportunities exist to increase the labour and local resource content of the later where local poverty reduction and job creation are significant development objectives. LICs also tend to have a more favourable cost relationship between labour and capital which can support labour intensive methods.

The shift towards green growth and sustainable development also has the potential to support expansion of construction and associated supply chain jobs. The number of green jobs is expanding rapidly in developing countries as economies transition to more sustainable models. For example, the South African government has evaluated the potential to create net direct green jobs at 460,000 by 2025.¹¹³ Evidence indicates that growth in green jobs in developing countries is higher (6.1%) than for overall formal employment on average (5.8%).

However, it is also clear that a shift to cleaner and more efficient practices may result in short term dislocation (where more inefficient and labour-intensive jobs are displaced). Bowen and Kuralbayeva find the potential for net job destruction in carbon intensive industries such as construction, which is only mitigated if environmental taxes (for example, carbon levies) are recycled for job creating activities and investment in sustainable sectors.¹¹⁴ In the longer term, gains in other industries would fully offset those losses.¹¹⁵ However, these effects are poorly understood and require greater evidence.¹¹⁶

4.3 Undertaking VFM assessment on labour market interventions

In practical terms, DFID advisors considering investing in construction labour market reform as part of a business case will be expected to undertake a cost-benefit analysis of potential interventions (including against other interventions). This requires developing a discounted valuation model of the potential costs and benefit streams related to the project to create a benefit-cost ratio (BCR). This can then be compared against the returns on similar programmes or against other sector interventions. This work will normally be undertaken by a labour market or developmental economist, following DFID economic appraisal guidance (based on HMG Green Book guidance).

¹¹¹ ILO(2015e)

¹¹² ILO(2015e)

¹¹³ OECD et al., (unknown)

¹¹⁴ Bowen and Kuralbayeva, 2015

¹¹⁵ Bowen and Kuralbayeva, 2015

¹¹⁶ Deschênes, 2013

Costs will generally be those associated with programme implementation (both DFID and 3rd party co-financing). Costs may also include additional financial obligations to employers (wages, taxation, HSE costs). The impact of improved regulation or compliance on construction sector companies acts as a value transfer system from employer to employee.

The benefits of labour market interventions are potentially many, with some direct and others indirect. Some can be potentially quantified and valued in economic terms, while others may be qualitative.

Table 4: Costs and benefits of construction sector reform

Costs	Direct programme costs
	Third party co-finance and leverage
	Additional costs of regulation and compliance to construction sector (e.g. wages, improved standards)
Socio-economic benefits	Additional jobs created in supply chain (direct and indirect)
	Avoided loss of life and injury (measured in terms of shadow wage rate)
	Reduction in economic losses to employers (e.g. compensation, fines)
	Higher skills and productivity (e.g. quality and speed of infrastructure delivery)
	Wider and more inclusive labour pool (qualitative)
	Increased economic activity (SME expansion, spillover effects)

Within a cost-benefit analysis, consideration should also be given to equity - the extent to which the project targets disadvantaged areas, engage with marginalised groups. Interventions that underpin construction projects targeting areas that support marginalised populations should also be taken into account.

There is a significant body of valuation work on job creation, exploring the use of shadow wage rates to account for displacement within the economy. However, a review of the evidence indicates no identified studies where specific cost benefit analysis had been undertaken on improving labour conditions in the construction sector. This therefore constitutes an area of research to which DFID could make a valuable contribution both through ex-ante appraisal and ex-post monitoring and evaluation.

4.4 Impact of imported labour and supply chain resourcing models

There have been concerns that economic value associated with investment in construction and associated labour markers may not be fully captured by the local economy where there is a higher level of participation by international companies (particularly those operating an import-based labour and supply chain model as is sometimes the case with developing country contractors). While the report has set out some of the potential benefits of foreign contractor engagement, it is not fully clear whether the use of import-based models hinders economic growth (reducing capture of direct benefits from construction within the domestic economy), or rather supports growth by increasing the speed, efficiency and quality of infrastructure delivery and the associated downstream benefits to users.

For example, China is the largest provider of construction finance in Africa. Chinese construction contractors currently represent c. 50 per cent of Africa's international engineering, procurement, and construction (EPC) market, with a total value of c. USD 40 billion. Six of the ten largest international EPC contractors operating in Africa are Chinese: China Communications Construction, China Railway Group, Sinohydro Group, China State Construction Engineering Corporation, China Railway Construction Corporation, and Citic Construction Company, but it is estimated that upwards of 1500 Chinese firms are engaged in construction and real estate. African government officials overseeing infrastructure development for their countries cited Chinese firms' efficient cost structures and speedy delivery as major value-adds.¹¹⁷

¹¹⁷ McKinsey and Company (2017)

Where there is large-scale use of imported labour or supply chain resource on large infrastructure projects, the direct benefits accruing to the domestic economy may be more limited or have different distributional effects, including:

- Lower capture of economic dividend by local firms and labour.
- Reduced multiplier and spillover effects due to remittances.
- Uncertain social conditions for migrant workers (exempt from local labour laws).
- Lack of skills development within the local workforce.
- Constrained local enterprise development (although some supply chain benefits).

The use of imported labour and supply chain resource models may be a clear sign of market failure, reflecting concerns over the quality and/or cost of local goods and services. It may also reflect more strategic industrial policy on behalf of the exporting nation (e.g. linking low cost procurement to the use of indigenous resources, labour and low-cost export finance or other guarantees) These policies may further reduce the opportunities for local supply chain development, stunt the development of nascent industries, and reduce associated employment opportunities in the construction ecosystem. These effects are potentially greater than those associated with foreign capture of direct employment opportunities.

While imported labour and resource models may pose a challenge to ensuring local development impact, the situation is not static. For example, the evidence is that large turnkey developers are moving quickly towards greater use of domestic labour, with only management positions now usually filled by foreign labour (44 per cent). McKinsey estimated that 85 percent of employees in Chinese owned construction enterprises operating in Africa were African.¹¹⁸ Also, nearly two-thirds of Chinese employers provided some kind of skills training. Half of companies engaged in construction offered apprenticeship training to domestic workers to meet skills requirements.¹¹⁹ The potential upsides of foreign contractor involvement (exposure to higher quality standards, training on more advanced mechanisation techniques) may outweigh potential downsides.

To ensure VFM in development terms, prioritisation should be given by DFID to supporting local construction companies, focusing on improving labour standards and skills. When engaging or partnering with international contractors, DFID should promote skills transfer, local labour and supply chain content, and encourage robust and transparent labour standards. Efforts should also be made to promote local supply chain development to ensure that indirect jobs are also created.

4.5 Understanding technology and supply chain trends

One key VFM challenge is understanding whether ongoing structural changes in the construction sector (emergent technologies, supply chain integration, digitisation) are likely to make donor programmes promoting labour-intensive interventions less attractive, and / or whether these trends will change the nature of support that should be provided.

At a high level, there has been a long-standing debate between labour market economists of the relative benefits associated with increasing the labour intensity of construction (i.e. more jobs) versus improving the economic efficiency of the sector (i.e. greater levels of mechanisation, pre-fabrication, etc.). The evidence is that more efficient and developed construction sectors in wealthier countries have lower levels of labour input, and higher levels of economic output than their developing country counterparts. This raises the question of whether construction industry should be seeking to reduce labour intensity from an economic development perspective, rather than using the sector for welfare and job creation purposes.

A report by the ILO (2015) examined this trend.¹²⁰ It recognised that off-site construction is increasingly used to increase productivity, control costs, improve quality and efficiency, as well as expand export operations. These trends are more prevalent in developed markets (e.g. OECD) but are increasingly appearing in MICs.

¹¹⁸ The main reason for employing local labour is cheaper labour costs. It is estimated that it is five times more expensive to take a Chinese worker to Africa than it is to hire locally.

¹¹⁹ McKinsey and Company (2017)

¹²⁰ ILO (2015c)

It is likely that this trend will continue as the construction industry becomes more vertically integrated with the upstream manufacturing industry.

Off-site construction may also create employment opportunities in developing countries in the future, especially in housing delivery. However, there may be initial barriers, including regulations and incentives, and high initial set up costs for manufacturing. Increased off-site production will involve the creation of new skilled jobs upstream in manufacturing plants, as jobs are potentially displaced downstream in manual labour and skilled craft jobs on construction sites.

For example, according to the South African Construction Industry Development Board (CIDB) a brickwork house may generate up to 3.5 times more person-hours of employment than an equivalent prefabricated concrete house. It is not yet clear what the net effect in overall employment will be. However, it is likely that this shift will see the construction sector become increasingly integrated with manufacturing.

The World Economic Forum, for example is promoting mechanisation and automation within the construction sector, although this is currently targeting higher income countries only. Digital transformation within the construction supply chain also offers opportunity for higher skilled job opportunities.

4.6 Conclusion: DFID VfM Programming Guidelines

This section presents conclusions on whether investment in increasing the number and improving the quality of construction jobs represents value for money for UK aid. It also presents a set of high-level VfM programming guidelines setting out some of the considerations for engagement with the construction sector.

Overall, the report concludes that intervening in the construction sector (both to increase the number and quality of construction sector jobs) is likely to provide value for money for UK Aid, but that this value is dependent on addressing challenges in their local context and ensuring effective programme design. Key findings are discussed below.

Investing in the construction sector can provide significant benefits in terms of economic and employment effects, and potentially greater than those available in other sectors. A recent ILO study estimated total economic multipliers in high- and middle-income countries to be in excess of 3:1, based on direct, indirect and induced economic outputs (ILO 2015e). In the same study, employment creation was estimated at 158 jobs per million US dollars invested in a sample of middle income countries. Several studies indicate that the economic and employment effects are likely to be marginally higher for the construction sector than across the wider economy.

While direct value creation derives from the development, renovation, repair or extension of fixed assets (buildings, land improvements, engineering assets), the construction sector also has significant backward and forward linkages. Supply chain benefits can include the development of input industries, including cement, steel, paints and chemicals, glass, timber and machinery, alongside construction services, planning and design, finance, enforcement. The construction sector also has forward linkages, underpinning economic development in other sectors such as retail, services, commercial, health and education.

Within the construction sector, there are also potentially significant economic benefits associated with construction employment reform (addressing informality, health and safety standards, female and child participation, issues around capacity and collective bargaining). These can hinder effective sector development and impose high social welfare costs on governments and wider society. Addressing them can also improve the economic efficiency of the delivery model itself.

At the highest level, the decision to invest in improving construction sector labour standards and markets should be based on an assessment of the opportunity costs of not addressing issues in other sectors.¹²¹ While it is beyond the scope of this report to make a cross sector comparison, it is nonetheless important to understand the necessary pre-conditions that might determine whether to engage in the construction sector, and what the scope and scale of any downstream intervention might be.

¹²¹ It is beyond the scope of this report to assess the relative value of interventions in the construction sector against other sectors.

A number of cross cutting opportunities exist for DFID to improve standards. These include:

- Supporting the licensing of intermediaries and gangmasters;
- Working with IFIs to promote and test labour safeguards on key infrastructure projects;
- Supporting the update of labour laws and standards;
- Improving enforcement and inspection regimes; and
- Supporting education within the sector.

Ultimately, the decision to support construction labour reform will depend on a strong understanding of the economic, regulatory, and commercial environment and upon a robust approach to design. Table 5 provides an overview of key lessons and principles.

Table 5: VfM principles for Construction Sector technical assistance programming: Improving chances of successful delivery

Programming consideration	Design implications
<p>Determining the suitability of construction employment interventions</p>	<p>Before deciding whether to engage with the construction sector reform, a number of questions should be addressed to identify whether this is likely to be the best use of DFID resources within a given country context. Firstly, issues relating to the likelihood of a programme delivering robust socio-economic returns should be identified. Questions include:</p> <ul style="list-style-type: none"> • Does the construction sector make up a significant share of the economy and/or is capacity a major bottleneck to economic growth? Is the construction sector key to underpinning economic transformation and/or stability (e.g. in early stage industrialising economies or post conflict environments)? • Does the country suffer from significant challenges in relation to identified construction labour standards such as informality, migrant worker conditions, health and safety standards, protection for women and child labour, training constraints or lack of collective bargaining that prevent efficient sector development? • Does the country rely heavily on imported labour and or goods and services in the construction supply chain, potentially lowering the effectiveness and reach of engagement in local markets? <p>Consideration should be given to the opportunity costs of not spending donor funds on other sectors of the economy which may so act as bottlenecks to economic growth or where similar social protection and equity challenges can be found.</p>
<p>Ensuring that the construction sector offers a good opportunity to promote economic development and social welfare.</p>	<p>At a macro-level, the evidence suggests that investing in the construction sector is likely to deliver strong economic benefits. The construction sector generally reports higher levels of gross economic output per unit invested than other sectors, as supply chains tend to be domestic and relative labour intensity means economic value is captured in the domestic economy. Spillover effects play a significant role in wider economic growth (e.g. in services). Investment in construction also tends to result in higher levels of jobs (direct, indirect and induced) than other sectors, although the overall levels seem to be lower in LICs than in higher income countries, perhaps due to the lower level of development within the construction industry supply chain. Investment in construction and associated job creation can provide economic stimulus during periods of economic downturn or in relation to poverty alleviation. However, care should be taken to ensure that construction employment interventions are sustainable and supported by growth in aggregate construction demand within the economy, to ensure that value can be maintained over time.</p>

Programming consideration	Design implications
Determining the most appropriate focus for intervention.	Once investing in better construction employment practices has been identified as an attractive opportunity to promote social and economic development, the focus of engagement should be clearly linked to issues prevalent in the local market environment. This report sets out potential weaknesses associated with different markets (informality and lack of collective bargaining, foreign labour, poor OSH, skills deficits, exploitation of women / children / forced labour) together with potential programming solutions to each. Each DFID country is affected to a greater or lesser extent by these weaknesses and there will not be a one size fits all approach to programme design. The report presents relative country-level statistics in relation to some of these issues, which in turn might be useful in terms of targeting and justifying programming. However, it should be recognised that most DFID countries will suffer to some extent from these challenges, and that the ranking of countries should only be used as a starting point to assess individual country strengths and weaknesses. Within a single country context, there may be significant regional or sub-sector variations, and further work will be required in exploring challenges at a more granular level. In all cases, a focus should be maintained on ensuring that change processes are inclusive, transformational and deliver equity for excluded and marginalised groups.
Identifying the right solutions to address underlying causes of market failure.	The report presents a number of potential types of engagement for addressing identified challenges. However, where a structural weakness is identified, it is important to ensure that the solutions developed are appropriate to the context of the construction employment market. For example, the structure of the construction industry in DFID countries is often not conducive to collective bargaining and union density (due to the high prevalence of informal and casual workers and micro-enterprises). Rather than lobbying for higher union recognition and formal collective bargaining structures, a more realistic solution might be the promotion of more informal social dialogue (e.g. associations of informal workers and the promotion of linkages between formal and informal workers). Understanding the political economy of implementation is key, and in particular the underlying causes of labour market failures, rather than just the symptoms.
Maximising the benefits of integrated programming.	Evidence from existing programming indicates that there are benefits from engaging simultaneously across a range of appropriate intervention areas. This provides benefits both in terms of programming risk diversification, but also allows for cross-learning and can create synergies. The most successful programmes seek to combine demonstration initiatives (e.g. specific job creation or improvement activities) with scale-up approaches (either through regulators, construction industry associations, or other sector bodies). Demonstration effect is key to creating trust, showing proof of concept, and reducing employer concerns around costs, labour issues, and productivity. Demonstration effect is particularly powerful in LICs where perceived barriers to change are strong.
Opportunities for integration with wider thematic / sector programming.	Construction employment interventions can potentially deliver strong VFM co-benefits where they are integrated with more focused sectoral interventions (e.g. roads, transport, housing), or other cross-cutting priorities (e.g. climate change, poverty alleviation, female empowerment). DFID might therefore explore opportunities to include construction employment interventions as subcomponents within larger programmes. One example is green construction (e.g. Zambia Green Jobs Programme) which simultaneously delivers job growth and reform within a larger low carbon development supply chain. Such projects may have a different primary purpose (e.g. developing supply chains for an emerging sector), but may also include within that some element of job creation, reskilling, or regulatory reform.

Programming consideration	Design implications
<p>Designing programming approaches to maximise chances of success.</p>	<p>A review of existing programmes indicates that there are a number of important key success factors (KSFs) in implementing successful interventions. These include engagement with high-level stakeholders (particularly to support regulatory reform and / or the adoption of voluntary best practice), focussing efforts in a small number of high impact initiatives (to build visibility and trust), engaging with both workers and private sector employers to ensure that incentives are aligned and that proposed solutions are acceptable, anchoring initiatives in larger scale construction capital investment projects (to ensure economic viability, labour demand and skills relevance), and adopting a market supply chain based approach that looks at skill sets beyond pure construction labour (thereby supporting sector viability). Again, strong political economy approaches and robust stakeholder analysis are important.</p>
<p>Dealing with high levels of foreign contractor/foreign worker participation.</p>	<p>The level of foreign contractor participation in the construction industry should not automatically be regarded as a barrier to engagement. Foreign contractors can potentially be an asset in improving construction employment practices, as they can raise standards in the supply chain, and deliver investment in training or apprenticeships. It should also not be assumed that high levels of international contractor involvement (e.g. Chinese EPC) are automatically associated with migrant labour (as this is more likely to be at managerial level), and the economics of imported labour mean the trend towards greater use of domestic labour is set to continue. There are, however, few models of successful engagement between donors and contractors from emerging economies from which to draw lessons about successful engagement. Where migrant labour does form a significant proportion of labour, then the focus should be on conditions (informality, OSH), rather than on skills, the benefits of which are unlikely to be captured by the domestic economy.</p>
<p>Accounting for supply chain and technological trends.</p>	<p>The design of labour intensive programmes in the construction industry (i.e. where job creation is the primary focus) may run counter to prevailing efficiency trends associated with increased pre-fabrication and mechanisation, particularly for larger projects in more developed (lower) middle-income economies. As such, there is the potential for temporary employment gains to be promoted at the expense of improved efficiency and quality of delivery. In developing countries, the trends towards mechanisation and pre-fabrication are more likely to emerge initially in larger-scale construction projects, with greater involvement of foreign contractors and more complex supply chains. Such scenarios favour investment in worker upskilling and retraining (potentially moving up the supply chain into fabrication). The use of the construction sector to create lower skilled jobs is better done in market contexts where there is no immediate prospect of greater efficiency or economies of scale (i.e. in community-scale construction works) or in poorer / low wage markets where there is less immediate opportunity for improvements in efficiency.</p>

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Annex A: Employment in the construction sector in DFID countries of focus

Country	Proportion of the workforce employed in construction (2014)	Expected CAGR of construction employment 2014-2019	Total Construction Employment (2014) (In '000s)	Male Employment (000s)	Female Employment (000s)	Male Employment (Per cent)	Female Employment (Per cent)
Afghanistan	2.00%	8.98%	147	142	5	96.60%	3.40%
Bangladesh	5.70%	6.71%	4,299	3,773	526	87.76%	12.24%
Congo, Democratic Republic of	2.40%	6.48%	605	585	20	96.69%	3.31%
Ethiopia	2.00%	7.72%	881	697	184	79.11%	20.89%
Ghana	3.40%	5.87%	375	364	11	97.07%	2.93%
India	10.80%	5.25%	50,950	44,262	6,688	86.87%	13.13%
Kenya	2.90%	6.54%	477	467	10	97.90%	2.10%
Kyrgyzstan	11.10%	2.96%	270	258	12	95.56%	4.44%
Liberia	3.20%	7.50%	48	41	7	85.42%	14.58%
Malawi	1.70%	4.83%	120	116	4	96.67%	3.33%
Mozambique	2.80%	7.49%	267	262	5	98.13%	1.87%
Myanmar	6.20%	6.97%	1,900	1,859	41	97.84%	2.16%
Nepal	3.70%	6.14%	560	500	60	89.29%	10.71%
Nigeria	1.70%	5.27%	885	839	46	94.80%	5.20%
Pakistan	7.30%	5.40%	4,633	4,575	58	98.75%	1.25%
Rwanda	3.80%	6.55%	226	208	18	92.04%	7.96%
Sierra Leone	2.50%	6.67%	60	47	13	78.33%	21.67%
South Africa	6.40%	1.44%	946	838	109	88.58%	11.52%
Sudan	5.20%	5.71%	546	543	3	99.45%	0.55%
Tajikistan	7.60%	4.24%	250	243	7	97.20%	2.80%
Tanzania, United Republic of	1.40%	5.84%	346	333	13	96.24%	3.76%
Uganda	1.90%	9.89%	281	273	8	97.15%	2.85%
West Bank and Gaza Strip	15.90%	6.46%	130	130	0	100.00%	0.00%
Yemen	9.80%	7.38%	597	593	3	99.33%	0.50%
Zambia	3.90%	6.38%	213	202	11	94.84%	5.16%
Zimbabwe	1.90%	5.51%	137	125	13	91.24%	9.49%

Source: ILO (2015a)

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