

THE MANAGEMENT OF CONSTRUCTION SITE HEALTH AND SAFETY BY SMALL AND MEDIUM-SIZED CONSTRUCTION BUSINESSES IN DEVELOPING COUNTRIES: A GHANA CASE STUDY

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Developing countries have a poor health and safety record compared to the developed world, which may be attributable to a low use of technology, labour intensive methods and low workforce participation in health and safety issues. According to the ILO (1999) construction sites in developing countries are ten times more dangerous than in industrialised countries. Ghana has a low infrastructural growth rate and a fairly unstable political climate. These factors, coupled to a dormant inspectorate division, have led to poor construction site health and safety. This has been exacerbated by lack of financial and administrative resources to effectively combat construction site accidents and ill health. It is posited that a change in attitude is necessary if the health and safety performance of the numerous SMEs operating in the construction sector is to improve. This paper reports on an exploratory study of the Ghanaian health and safety management system with particular focus on Ghanaian small and medium-sized contractors. Based on the analysis, the paper seeks to propose a way forward for safer and healthier construction sites run by construction SMEs working as subcontractors and/or main contractors.

Keywords: construction sites, health and safety, institutional framework, legal framework, small and medium-sized businesses.

INTRODUCTION

The construction sector in developing countries is dominated by small and medium-sized contractors, which operate mainly within the domestic market. These contractors give little attention to health and safety issues and therefore contribute significant numbers of accidents and ill health. It is known that occupational health and safety performance in developing countries is poorer than developed countries (Hämäläinen, Takala and Saarela 2006). Contractors in developing countries are constrained by lack of resources, which have a negative impact on the management of health and safety (Gibb and Bust 2006). The legal and institutional arrangements for the management of health and safety have little impact on the attitude of owner-managers of small and medium-sized contractors towards health and safety.

This study involved exploratory interviews of government institutions responsible for health and safety and some health and safety stakeholders. The paper presents the institutional framework and the legal framework of the Ghanaian occupational health and safety management system within which construction SMEs operate. The paper comprises the content analysis of current health and safety laws and an in-depth study

into the operations of government departments and organisations responsible for ensuring health and safety standards are maintained within industry. The paper is organised into the following sections:

- the first section gives the background to the study;
- the second section gives the methodology;
- the third section gives the literature review;
- the fourth section gives the results of the study;
- the fifth section discusses the results; and
- the sixth section gives the conclusions of the study.

METHODOLOGY ADOPTED FOR THE STUDY

In-depth interviews were conducted with key informants within three government institutions responsible for occupational health and safety and three health and safety intermediaries. The interviews sought for information on organisations' characteristics, their role in the management of health and within construction SMEs, and relevant health and safety law they seek or are mandated to implement. Data from document sources were also analysed.

LITERATURE REVIEW

The Ghanaian economy and construction sector

Ghana is a small West African country with a population of 20.4 million (2003) and a land area of 238,500 square kilometres.. The economy thrives mainly on agriculture, which accounts for about 37% of GDP and employs 60% of the labour force. After suffering various economic setbacks in the 1970s, stringent measures notably the Structural Adjustment Programme (SAP) and the Economic Recovery Programme (ERP) were implemented in the 1980s. These measures have led to a new vision of Ghana emphasising wealth creation, improved governance, and private sector development and a fairly stable macroeconomic environment.

The construction industry contributes to 3.1% of GDP and it is dominated by small local businesses with hardly any of them employing more than two hundred and fifty employees. Large firms employing over two hundred and fifty are foreign firms and are few in number. As in other developing countries the large firms are foreign contractors who are mainly engaged to undertake large projects (Aniekwu 1995, Adams 1997). The local firms therefore form the majority of construction businesses in the country and may be conveniently categorised as small and medium-sized businesses run by owner managers. Addo-Abedi (1999) notes that almost all local construction companies in Ghana are run as family businesses by owners and their spouses, and sometimes their children or other close relatives. The organisational structure of local firms has the owner as the sole decision maker and often he or she is saddled with several management functions that result in poor performance including health and safety.

The structure of the construction sector

The structure of the construction sector is tied to the Government ministries responsible for public infrastructure development. The Ministry of Roads Transport (MRT) is responsible for the development and maintenance of highways and the

provision of transport services for all modes of transport in Ghana. The Ministry of Works and Housing (MOWH) registers contractors and classifies them into classes D and K. Class D for those contractors qualified to undertake building construction works and class K for those that are qualified to undertake civil engineering construction works. Contractors registered in either class are further classified into subclasses 1, 2, 3, or 4. Contractors are free to register with either ministries and to join the Association of Road Contractor of Ghana (ASROC) or the Association of Building and Civil Engineering Contractors of Ghana (ABCECG). It should be emphasised that the two associations are a direct reflection of the two ministries responsible for regulating the activities of contractors in the country:

The impact of regulation policies on activities of construction SMEs has been minimal despite the numerous bodies handling regulatory policies in the country (Ofori 1991, UNCHS 1996). Eyiah (2004) has indicated that there is regulatory burden on construction SMEs, which threatens the sustenance of the sector. The majority of SMEs employ local labour and undertake mainly labour-based contracts.

Health and safety management within construction businesses.

Like many other developing countries, Ghana's construction is marked by poor performance (Eyiah and Cook 2003, World Bank 2003, Anvuur and Kumaraswamy 2006). Like other low-income countries the construction sector has a higher accident rate than many other economic sectors. Legislation on health and safety are approved by parliament including ILO conventions however their implementation by the relevant government bodies is poor. According to Cotton, Sohail and Scott (2005) low-income countries are constrained by lack of effective mechanisms to implement laws governing employment. Additionally, many construction operatives are employed on temporary and casual basis and therefore the employment conditions are not properly defined thus offering little protection on workers health and safety (Mitullah and Wachira 2003).

Contractors in developing countries particularly the indigenous ones face numerous constraints which could hamper the effective management of health and safety, if not taken into consideration. Gibb and Bust (2006) identified the following factors that could influence health and safety management of construction sites in developing countries:

- poor infrastructure;
- problems of communication due to low literacy level;
- unregulated practices on construction sites;
- adherence to traditional methods of working;
- non availability of equipment;
- poor site security;
- extreme weather conditions
- improper use of equipment; and
- corruption.

Koehn, Ahmed and Jayanti (2000) cited in Gibb and Bust (2006) mentions difficulties in training due to illiteracy as a barrier to effective health and safety management in developing countries. The forgoing constraints in construction may be argued to have

a negative impact on the management of health and safety resulting in poor health and safety performance of construction sites in developing countries. Consequently, strategies to ensure better health and safety outcomes on construction sites under SMEs are therefore necessary.

RESULTS OF THE STUDY

Government institutions responsible for health and safety

The Factory Inspectorate Department and Labour Department are the two major government institutions responsible for health, safety and welfare administration. The two departments are under the Ministry of Manpower Development and Employment.

The Factory Inspectorate Department is empowered to enforce workplace health and safety standards. It ensures that all workplaces maintain minimum standards of health and safety prescribed by the Factories, Offices and Shops Act, 1970 (Act 328). Apart from carrying out workplace inspections, the department conducts workplace surveys, provides occupational health and safety information, registers factories including construction sites and proactively promotes workplace health and safety through workshops and seminars. The labour department is responsible for administering the Labour Act, 2003 and the Workmen's Compensation Act, 1987. The two departments faced human and logistical constraints, which have stifled their operational efficiency. The Chief Factory Inspector lamented on the situation:

“Our scheme of service is not attractive so we recruit staff, get them trained for the basic rudiments of factory inspection and then after one year they find some lucrative places to go and work; so our labour turnover is high up to fifty percent. The department is also constrained by logistic problems”.

Role of government institutions in construction health and safety management

Statistics on construction accidents in Ghana is very scant providing little evidence of the health and safety performance of the sector. Available statistics on accidents reported for workmen's compensation indicated the sector had a poorer health and safety performance than most other industries (refer to Tables 1 and 2). A comparison of employment within the various sectors (Table 3) with the number of accidents occurring in the sectors amplifies the poor health and safety performance of the construction sector. The construction sector employs 1.4% compared with the agriculture 55%, manufacturing 11.7% and transport 2.2%. Thus in terms of number of accidents per worker, construction led in the year 1975 and it was second to transport, storage and communications sector in the year 2000. This interpretation is however based on the assumption that employment within the sectors remains constant over the years.

The sector had a very low rate of reporting accidents and construction sites were rarely registered with the Factory Inspectorate. The Chief Factory Inspector indicated the difficulty of monitoring the health and safety on constructions sites and the attitude of contractors as follows:

“Unfortunately, construction as we know is one of the hazardous areas you can get workers in but before you even get to a construction site, they have already started the work either out of ignorance of the law or their refusal to comply with the law. It is not like a factory where you know the location and it is there for several years. If they close down they will come and tell you whereas contractors will not register their sites and by the time the Factory

Inspectorate is aware it is near completion. We most of the time do not get there in time to examine the safety and health aspect before they start”.

The most frequent causes of accidents on construction sites were indicated to be happening in the cause of operating machinery and equipment and falls from height. This was thought to have a direct bearing on the skill levels of site operatives. Many site operatives rarely attained the requisite level of competence to carry out their task. The Factory Inspectorate recounted constructions site accidents as follows:

“Most of the time at construction sites, which we have investigated, the accidents involved cranes tilting over and other equipment on sites or workers falling from height. The other frequent causes of accidents are that involving woodworking machinery where injuries such as amputation and cuts result” (Chief Factory Inspector).

Table 1: Occupational accidents reported from various economic sectors in Ghana from 1974-1975

Sector	Number recorded	Percentage
Agricultural/Forestry/Fishing	754	12.4
Mining and Quarrying	687	11.3
Construction	1108	18.3
Manufacturing	1661	27.4
Transport, storage and communications	913	15.1
Commerce	503	8.3
Electricity, Gas, Water and Sanitary Services	217	3.6
Service industries	221	3.6
Total	6064	100

Source: *Workmen’s Compensation Law, 1987*

Table 2: Workplace accidents reported and claims by industry division and economic sector from 1st January to 31st December 2000

Industry division	Cases reported and brought forward			Total of Cases finalised	Amount of compensation paid ₵
	Fatal	Non-fatal	Total		
Agricultural, Hunting, Forestry and Fishing	99	980	1079	247	175,633,506.58
Mining and Quarrying	46	102	148	36	477,168,829.35
Manufacturing	42	1770	1812	227	170,802,488.15
Electricity, Gas, and Water	67	224	291	40	334,330,409.96
Construction	56	846	902	134	125,447,249.15
Wholesale, Retail Trade, Restaurant and Hotels	13	151	164	16	73,840,224.36
Transport, Storage and Communications	32	2102	2134	108	73,480,611.38
Financing, Insurance, Real Estates and Business Service	-	81	81	3	5,519,676.04
Community, Personal Services	46	246	292	59	52,796,505.94
Activities not adequately defined	-	14	14	3	2,164,000.00
Total	401	6,516	6,917	873	1,491,183,500.91

Source: Annual Report of the Labour Department, 2000

Table 3: Employment of active population aged 15 and above by type of industry (000s)

Sector	1991/1992 (percent)	Absolute	1998/1999 (percent)	Absolute
Agriculture	62.2	3744.4	55	5566.0
Mining/quarrying	0.5	30.1	0.7	70.8
Manufacturing	8.2	493.6	11.7	1184.0
Utilities	0.1	6.0	0.1	10.1
Construction	1.2	72.2	1.4	141.7
Trading	15.8	951.2	18.3	1852.0
Transportation/Communication	2.2	132.4	2.2	222.6
Financial Service	0.5	30.1	0.8	81.0
Community/Social Services	9.3	559.9	9.8	991.8
Total	100	6020.0	100	10120.0

Source: Ghana Statistical Service 2000

Attitudes of construction SMEs towards construction site health and safety was seen to be poor due to lack of awareness on health and safety issues and the desire to make more money was considered to override other project objectives including health and safety. Attitudinal change was therefore considered necessary by consultants (given in next section) to ensure SMEs deliver projects at a higher level of health and safety performance than currently practiced. The Factory Inspectorate suggested the change in attitude could come about through sensitisation and giving guidance on good health and safety practices. The labour department staff lamented the attitude of SMEs as follows:

“Small-scale contractors want to make the maximum profits and would not provide the personal protective equipment for their workers. They do not evaluate the risk involve in carrying out construction work and as such do not take steps to minimise or eliminate hazards. Some of their workers are employed without completing their apprenticeship; while some may not be trained. They may not be sensitised for their safety. Most of their workers are from the informal sector where they may not go under any regulation or union. They wouldn't want to spend their time, money and resources to train their workers to a certain standard of safety and health” (Deputy Chief Labour Officer).

The Labour Department issues labour certificates to contractors bidding for jobs to certify that they comply with all labour laws. This is one requirement of the conditions of contract for all public projects and most other projects undertaken in the country. It is however difficult to assess whether a contractor issued with a labour certificate continues to comply with working conditions outlined in Labour Act, 2003 after winning a contract. It was only companies that were known to have poor workplace health and safety standards that were refused such certificates to deter other employers from violating the provisions contained in the Labour Act, 2003. The department embarked on health, safety and welfare education since 2000 by organising workshops with the Association of Road Contractors of Ghana and Association of Building and Civil Engineering Contractors of Ghana. The Deputy Chief Labour Officer commented on the success of the campaign as follows:

“The contractors associations are the focal point of our campaign and workshops they organised for their members have sessions for presentations

on laws governing labour relations. Many contractors are now aware of the current Act; Labour Act, 2003 and comply with the provisions on health, safety and welfare contained in it. There however remains a problem with self-employment and micro contractors”.

The Labour Department proactively promoted unionisation in the construction industry through sensitisation seminars and workshops. The chief labour officer noted workers’ insistence upon their rights was however below expectation.

“Unionisation is stronger in the construction sector than most other sectors. Workers however consult their union leaders especially on matters pertaining to health, safety and welfare when they were injured or when suffering from illnesses they think are related to their occupation. We recorded thirty strike actions in the construction sector, alone in 2005 which indicates that there are workplace relations problems in the sector”.

Health and safety stakeholders

Health and safety stakeholders who influence health and safety management of construction SMEs include employers’ organisations, employees’ organisations and consultants.

Role of stakeholders in health and safety management within SMEs

Employers’ organisations ran workshops and short-term programmes in workplace health, safety and environmental management. A training officer of the Ghana Employers’ Association emphasised workplace health and safety thus:

“Safety is something that you cannot separate from the work environment so in all our functional areas, safety plays a key role. For instance we have the law that ensures that certain safety measures are practiced; it is legal so the industrial relations area, which is the core, tries to ensure that at the workplace safety standards are maintained. We promote employers interest and try to implement safety laws to ensure the gang of employees whose effort that we are generating to create the wealth in the organisation is optimised. In the consultancy and training departments we try to sensitise, disseminate information on health and safety”.

Employers’ association encouraged firms irrespective of size to become members and had especially directed its efforts towards SMEs because of their poor health and safety record:

“The health and safety standard of SMEs has not been very encouraging and that is why employers must have the benefit of coming to join us so that we may take the advantage to educate them about safety law and health and safety standards to be maintained at the workplace. The only way we can reach SMEs is for them to come to the health and safety forums that we organise” (Training Officer Ghana Employers’ Association).

The impact consultants have made on the management of health and safety was minimal which was partly due to the bad attitude of consultants towards construction site health and safety particularly cost consultants. Health, safety and welfare provisions in conditions of contract were at a very basic level. Contractors were expected to comply with health and safety clauses in the conditions of contractor. The only mode of health and safety evaluation of contractors was the requirement that they

possess a labour certificate. One of the consultants had this to say on the attitude of consultants:

“The moral commitment to ensure safe and healthy sites is very low amongst consultants in this country. We do not set good example and that is the problem. If for instance I go to a construction site today and I put on the necessary helmet, boots and the necessary personal protective equipment then I will be doing a lot of service to improving construction site health and safety. Professionals are not committed to improving health and safety of construction sites; we talk of ensuring safer construction sites but we are not serious” (Principal Quantity Surveyor of Architectural and Engineering Services Limited).

The consultants thought contract conditions should be more detailed on specific health and safety issues such as temporary works and contractors educated on health and safety. It was also noted that construction workers lacked sufficient empowerment to ensure health and safety provisions on site. This was attributed to the inactive tripartite committee and lack of national health and safety policy.

“Unfortunately even though we have some contract clauses that protect workers, they are not empowered sufficiently to insist on their rights and to take contractors to court. Also because the demand for labour is low and most workers are not literate most contractors take advantage of them” (Principal Engineer-Ghana Highways Authority).

It was however noted that designers do undertake professional indemnity insurance with respect to their liability if accidents occur as a result of poor design. This suggested that some designers were aware of their responsibilities regarding health and safety but the lack of specific law on construction health and safety made their work difficult. Designers can be held liable under common law for construction site accidents and illnesses resulting from poor design or lack of proper supervision. In broad terms they are liable for tortious acts committed in relation to professional services they render.

DISCUSSIONS

Legal framework of health and safety

Common law, ILO Conventions and statutes provide the basis enforcing health and safety measures on construction sites. Statutes which had direct implications on the management of construction site health safety are:

- the Factories, Office and Shops Act, 1970;
- the Labour, Act, 2003; and
- The Workmen’s Compensation Act, 1987.

Health and safety clauses in contract conditions also form part of the legal framework of the Ghanaian occupational health and safety management system. Construction SMEs have to comply with the requirement of these laws and other laws. Compliance with health and safety legislation is noted to be low and there is no evidence in support of the observation of Eyiah (2004) that SMEs are already overburdened. Problems of complying with legislation are evident from the study and health and safety provisions in contract clauses are not detailed, which accords with Cotton,

Sohail and Scott's (2005) call for incorporating existing legislation into construction contracts and making clauses operational.

A need for consultations involving government, employers' organisation and the Trades Union exists and efforts at ensuring this through a national health and safety bill is currently being pursued. Like any developing country there is growing industrialisation in Ghana and this has adverse effects on workers. Unfortunately development of legislation or updating existing legislation in light of fast rate of industrialisation is slow and this trend could lead to the country deprived of a healthy workforce.

Institutional framework

The institutional arrangement in relation to occupational health and safety administration in Ghana is departmentalised. The Principal enforcing body of occupational health and safety regulations is the Factory Inspectorate Department. Other departments and agencies are responsible for laws relating to labour standards and certain specific aspects of health and safety.

The enforcing authorities do not fall under one ministry and this may have serious implications for the implementation of health and safety policy. Growing industrialisation and a fast growing private sector dominated by SMEs will require stronger and well organised institutional arrangements to ensure health and safety standards at workplaces are maintained. The health and safety performance of construction sites under SMEs will in particular remain poor until consultants in the built environment and owner managers are willing to change their attitudes and take up the challenge.

CONCLUSIONS

The findings from the exploratory study have been presented which provide a broad perspective of the legal and institutional framework shaping health and safety management of indigenous contractors, which are mostly SMEs. Ghana has the necessary institutional infrastructure for effective management of occupational health and safety. However lack of government commitment exemplified by logistical constraints facing the Factory Inspectorate Department limits the operational efficiency of government departments responsible for occupational health and safety management in the country. The influence of health and safety stakeholders in the Ghanaian health and safety management system cannot be overlooked. Employers associations and the Trade Union Congress have tremendously facilitated improvements in standards of health and safety in workplaces. The influence of these on construction SMEs with regards to health and safety is however minimal

Certain limitations of the study results need to be recognised. First, the study results should be viewed as exploratory and secondly only as a useful first step toward verifying underlying health and safety issues facing construction SMEs.

Further research should be conducted to explore in-depth the factors contributing to low health and safety performance of SME-dominated construction sector. Such research will lead to finding strategies to overcome constraints in health and safety management and pave the way forward to improving health and safety performance of the construction industry in Ghana.

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