

# Asian-Pacific Newsletter

ON OCCUPATIONAL HEALTH AND SAFETY

Volume 15, number 1, April 2008

## Occupational injuries



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A group of migrant workers from Chhattisgarh at a residential construction site in Bangalore sitting next to an open excavation that has been left unprotected against a possible cave-in.

Photo by Zara Tzanev

# Preventing occupational injuries in the construction sector

## The LabourNet experience

Manmeet K. Bindra  
Richard D. Rinehart

**T**his article gives a general overview of the construction industry in India with a specific focus on the barriers affecting effective implementation of occupational health and safety (OSH) systems. The article summarizes the experience of LabourNet, a workforce development organization based in Bangalore, India, which is helping to generate a demand for OSH improvements in the industry and preventing occupational injuries.

### The construction industry in India

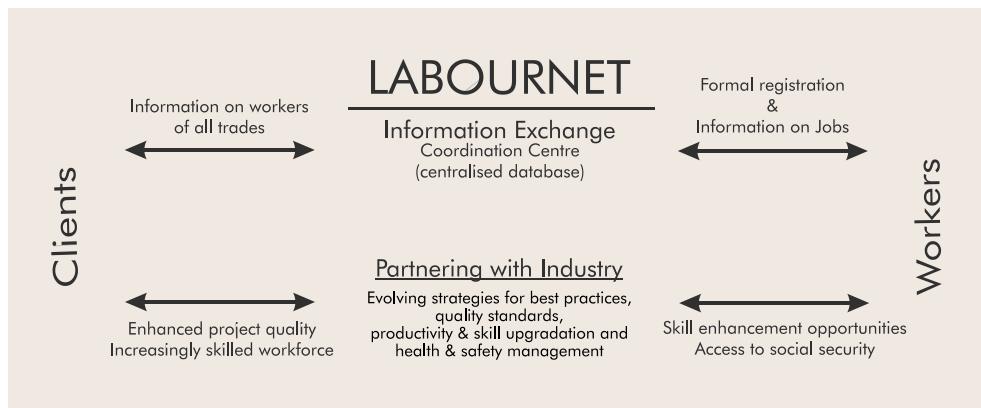
Construction is one of the most hazardous industries worldwide and typically ranks highest in terms of the total number of work-related fatalities each

year. However, data are not available for India, because there are no reliable systems in place to track and count work-related fatalities. The situation in India is complicated, because construction workers generally are not employed by formal contractors, even on the largest and most visible projects. They are typically migrant workers hired off the record by informal piece rate workers, or maistries. On medium-sized and large projects, the maistries are usually paid a lump sum or a piece rate by 'formal sector' contractors to get specific jobs done (e.g. bar bending, carpentry work, masonry, painting). The maistries in turn use their connections in rural villages to hire the migrant labourers to complete the tasks. This may include entire families, as a large number of women are involved

in menial jobs at most construction worksites. Families sometimes live on the worksites in makeshift housing (either tin sheds or tarpaulin shacks) with their children.

Depending on the size of projects, several independent maistries and their work crews can be on a site at any given time, some for only one or two days – others for much longer periods. The transient nature of this work makes it difficult to obtain safe and secure work environments at construction sites. Compounding the issue, project engineers, maistries and the unskilled workers have very little knowledge of OSH hazards and risks.

Labourers can frequently be observed in unprotected trenches over five feet deep, even though it is well documented worldwide that trench



**Figure 1.** Basic Strategic Approach of LabourNet

cave-ins kill thousands of workers every year. It is also common to see people working at heights with no protection against falling. Falls are the leading cause of construction-related fatalities in most, if not all, countries. Nonfatal injuries, such as cuts and lacerations, eye punctures, and back injuries are common among construction workers in all countries, but are likely exacerbated in India by the fact that many migrant workers are not aware of or do not have access to common tools and equipment to get jobs done safely and efficiently. For example, one does not have to travel to many worksites to see examples of scrap material being used as makeshift tools. While workers can be seen wearing shoes and hardhats on some larger projects, they are generally not available or used by migrant labourers on the majority of projects.

**Primary goal is to ensure that workers are able to find stable employment.**

#### LabourNet in construction

LabourNet India is a nongovernmental organization in Bangalore, India that aims to improve the working and living conditions of construction workers by increasing stability of employment. It serves as a link between workers and users (contractors, end clients, construction firms, home owners, builders, etc.) to transparently connect workers to jobs. Core activities include:

- Registering detailed job profiles of construction workers into a central database
- Connecting construction workers of all skill levels and trades to clients
- Organizing training opportunities for workers
- Facilitating access to social security benefits and related services

- Promoting programmes to prevent occupational injuries.

LabourNet interacts with tripartite stakeholders (industry, workers, and government) to jointly address broader issues impacting the construction industry and offering a legitimate framework for skills development and fair labour practices. It partners with training institutes, construction companies, government agencies, unions, financial service firms and others to connect people to resources and services. By serving as a facilitator that matches labour supply with demand, a platform is provided for workers and clients to find and interact with each other in a direct and professional manner. Its primary goal is to ensure that workers are able to find stable employment; improve their skill levels, and thereby employability; and enjoy basic social protection measures, including occupational safety and health. It aims to ensure that workers enjoy these benefits irrespective of where they work or from where they are coming. Figure 1 shows the basic strategic approach of LabourNet India.

The organization promotes OSH holistically by facilitating demand for safe working conditions throughout the whole system of construction from clients to workers, and connecting OSH information to skills development and productivity. It creates a framework for OSH involving project managers, site engineers, contractors, and workers.

#### Occupational health and safety issues in construction

OSH consciousness in India, particularly in the construction sector, remains abysmally poor. This is the case even with professional construc-

tion engineers and managers. Despite adopting certification systems such as OHSAS 18001 etc., most construction firms remain poor in implementation of OSH on worksites. There are many barriers to overcome to promote good OSH practices in the construction sector in India. These include, but are not limited to:

- Lack of OSH information systems to track and count work-related injuries and diseases so that high-risk activities can be recognized and targeted by the government and others who want to improve the situation.
- Lack of awareness and interest by contractors, supervisors, and workers towards safety, particularly at the site level. Contractors' top managers often do not appreciate the long-term benefits of learning how to operate construction sites according to international safety standards. Site supervisors and safety officers often fail to enforce safety and health and are lax in providing onsite security.
- Limited availability of safety and other equipment that meet international standards and a reluctance by contractors to source equipment that is available locally.
- Incomplete or no safety training for workers and almost no access to training and skill building opportunities.
- Lack of job market security; total dependence on intermediaries to source work.
- Extensive turnover of mostly migrant labourers who are vulnerable to exploitation.
- No social security benefits.
- Language barriers because migrant workers come from villages where different languages are spoken.
- Non-existence of overall OSH programmes (systems) within contractor organizations for jobsites to integrate



Photo by Jodi Hilton

Migrant workers working on the roof of an apartment building under construction in the Bangalore, India neighbourhood of Sahakara Nagar.

### Findings of a Construction Worksite Audit

## Company X is building a 14-story apartment building

**Site safety:** All gates of the site are properly secured with proper protection wall and guarded by security men. All floors are marked with proper ways and have been properly illuminated at the site. However, the steel yard poses a hazard for workers walking across the work premises, as bars lie scattered across the premises.

**First Aid facilities:** The first aid boxes are available on the site, but do not contain sufficient and appropriate medicines and first-aid material. The First Aid box has been kept inside the site office, but workers do not seem to be aware about its availability. Neither members of the project team nor subcontractors or workers have been trained in basic first aid care.

**Safety responsibility:** The person engaged for safety at the site is over-burdened with many other responsibilities and is quite ignorant on issues of safety management. Moreover, being a junior person, he does not have any authority to impose proper safety at site. The staff, with whom the LabourNet safety audit team interacted, seemed ill-equipped to handle an emergency situation – no training has been provided to them for the same. The audit revealed that there seemed to be no single person who could be held responsible for checking safety of scaffolding work and there were no record or documentation of the verification maintained.

**Safety material and equipments:** The storage of safety equipment is handled by the stores, but there seemed to be no proper maintenance and inventory mechanism for safety materials and equipment at the site. There is a shortage of the PPE (with respect to number of workers employed), especially safety belts, safety harness and safety boots. The workers have also expressed concern about the shortage of the PPEs. The purchase details from the inventory also show shortage of personal protective equipments. Both the subcontractor and the engineer seemed to differ on numbers of equipment supplied showing lack of an inventory and monitoring system.

**Safety at work:** At quite a few places protruding bars, shuttering boards with nails strewn around were noticed. With shoes being hardly used by workers onsite these could prove hazardous. Lack of signage near these, and lack of worker training on safer working practices are some issues needed to be addressed. No hand railing has been provided at the staircases and openings, posing a high risk to workers transporting head loads to higher floors.

OSH issues into daily activities.

- Deep-seated resistance to change at all levels.

The construction community and its stakeholders in India need to address very serious OSH problems that are commonplace today. LabourNet is attempting to facilitate change by engaging owners, contractors, maistries, and workers in innovative ways to catalogue and promote the adoption of good practices that focus on the positive and link greater performance with improvements in OSH. The following sections summarize LabourNet's approach to implementing safety on construction worksites and ways it is promoting solutions to overcome the barriers listed above.

### Approach to implementing safety on worksites

First and foremost, LabourNet takes the position that to effectively impact OSH at construction worksites it becomes necessary to look at systemic issues of contracts and the roles of influential client groups, such as project

owners. Safety is a top management prerogative. Occupational safety and health systems need to be embedded right from the design phase of a construction project (Prevention through Design). Therefore, LabourNet lobbies with project management consultants, client groups, architects and institutional networks to define understandable safety policies and insists on clear terms of safety regulations to be followed during project execution by explicitly mentioning them in contracts, along with the necessary budgets. It also argues to position safety as a major influence on product quality. There are several major contractors and client groups in the Bangalore area of South India who have joined LabourNet and agreed to these conditions as a first step to influencing safety.

LabourNet has also developed a safety audit tool that covers many aspects of the work process and leads to action. The main purpose of the tool is to identify OSH hazards, equipment shortages, training requirements, and to shed light on ways to develop systems to address the problems identified. Audits are conducted on the site



Migrant worker from the northern states of West Bengal and Orissa work atop a wooden beam scaffolding to construct a college auditorium in central Bangalore, India.

and involve direct observation, checklists and interviews with the Project Manager, Project and Site Engineers, Safety Engineer, Supervisors, Stores in charge, Sub-contractors, maistries, and the workers. Textbox on page 13 highlights an actual audit conducted at a worksite, which includes some of the major findings.

Following the audits, plans of action are created with the stakeholders and fees to cover expenses only are charged for services arranged by LabourNet (so they are sustainable without outside support and commitments by the companies are made to put into practice what is learned). Typical actions include:

- Training of project management teams on OSH systems, basic safety issues, and emergency management
- Implementation of OSH systems through the project management, including signage, supply, maintenance, and handling of safety equipment, and enforcing dos and don'ts
- Formation of safety committees / coordinators with representation from workers, maistries, and project teams with clear roles of monitoring
- Training of maistries and workers on OSH by trade and general first aid
- Monitoring and evaluating the functioning of the teams / committees
- Documenting near misses (almost always neglected).

The basic approach taken is to plan, implement and monitor safety practices as a part of good work execution and not to view them in isolation. Companies that participate also benefit from the other aspects of the LabourNet initiative as outlined in Figure 1.

While LabourNet is having some successes in preventing occupational injuries and promoting good OSH practices at construction worksites in India, there are many challenges and barriers to making positive changes on a wide scale, with significant impact, and that are sustainable from worksite-to-worksit. Below is a list of opportunities that could further improve the situation.

- Streamline the audit system and popularize it across the Industry.
- Identify (or develop through education) more local resource institutions and people.
- Detail emergency management mechanisms (as a separate module).
- Evolve a study on safety and its impact on productivity in the Indian construction sector, particularly the concept of Prevention through Design, whereby OSH considerations and actions are taken during the design

phase of construction projects.

- Set up OSH information systems to track and count construction-related fatalities to document the magnitude of the problem and identify top issues/hazards by phase of construction work.
- Develop model contract language related to OSH with stakeholders that is practical, specific and well defined.
- Draft standalone companion documents that describe the OSH contractual requirements in simple language (including do's and don'ts pictorially).
- Develop model plans that show how to design, plan and lay out the construction site area (specify how to establish and secure access points for personnel and equipment, set up quarantine areas, and designate green and red zones, proper systems for securing safety harnesses, etc.).

- Standardize, localize, and test simpler toolbox (tailgate) training kits to enable site engineers, safety officers, and stewards to consistently train transient workers to rigorous safety standards.

For more information on LabourNet, please visit its website at:  
<http://www.labournet.in/>

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