As industrialization spreads in Thailand, so do occupational diseases

THE HIGH COST OF WORKING

MICHELLE HIBLER

During the month of January 1981, the staff doctor of a wet-cell battery manufacturing company located close to Bangkok, Thailand, treated 303 respiratory complaints, 117 eye, ear, nose, and throat infections, 71 gastrointestinal disorders, and 32 cases of skin irritations. Six of the company's 400 workers were hospitalized for lead poisoning.

And yet this firm boasts better-than-average working conditions. There is a full-time physician and a small dispensary. Accidents are few. As there are no quotas to be met, the pace is relaxed and workers can take frequent breaks in a small garden.

The drive to increased productivity in many other enterprises can result in even higher rates of illness and numerous accidents. In 1977, for example, more than 7000 metropolitan Bangkok workers were hospitalized for work-related injuries, a 20-fold increase since 1960. An estimated additional 20 to 30 percent of work injuries went unreported.

No statistics are available on occupational diseases resulting from long-term exposure to noise, dusts, and hot working places or to various toxic chemicals and physical hazards.

According to Dr Malinee Wongpanich, chairperson of the Department of Occupational Health of Mahidol University's School of Public Health, in Bangkok, insufficient attention is paid to the health and safety of workers. The inadequacy of labour legislation, combined with an acute shortage of qualified personnel, can only aggravate the situation.
Trained medical personnel are in short supply and are often untrained. In a few instances, says Dr Malinee, recommendations on working conditions are made by institutes such as the Occupational Health Centre of the Ministry of Health, but improvements are left to the factories’ discretion. Many factory managers are completely ignorant of the few safety standards set by government.

More than 1000 factories are located in Samutprakarn Province, on the outskirts of Bangkok, employing some 64 000 workers, 80 percent of whom are in textile, fabricated metal products, and chemical industries. According to Dr Malinee, working conditions in these factories often resemble those in Europe during the industrial revolution in the 1800s. Living conditions are also inadequate: many workers, 90 percent of whom are migrants to the area, live in crowded, dirty dormitories, often directly above the shop floor. As the rapid industrialization of Thailand continues, conditions are expected to worsen if present trends continue.

Because scientific research in this area has been so scarce, no data exists to convince policymakers of the need for action. Thus, in 1979, Mahidol University launched a study of 600 textile workers in Samutprakarn Province to gather the needed industrial health statistics and identify specific occupational health problems.

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The foundry manager wants to solve these problems, but help is hard to find, he says. Different experts have given him conflicting information about the toxicity of chemicals. Physicians are not available for the pre-employment physical examinations. More than anything, though, he wants to know how to motivate the workers toward safety. “We have spent money on safety devices,” he says, “but the workers won’t wear them.”

In fact, in the dark, noisy smelting section of the foundry, a number of workers are not wearing the dust masks or hard hats provided. Some guide the 20-tonne bucket of molten ore with wooden sticks and remove the just-poured ingots without gloves. Scrap metal litters the floor. Because of the intense heat in the stretching section where red-hot metal is made into wire, workers grinding lead into powder are exposed to unhealthy working conditions. Air samples revealed excessive dust levels in the industries studied and inadequate safety precautions. In the battery manufacture, the face masks are not sufficient to prevent lead poisoning (top left), while steel workers pouring molten ore (bottom) are often without gloves, masks, or eye protectors.

The Department of Occupational Health of Mahidol University is the only institute in Thailand providing university-level training for industrial hygienists and physicians. It also provides courses for students in the Master of Public Health program as well as short courses for nurse aids and other industrial staff, and offers technical support to various government bodies.

Through interviews, working environment assessments, and physical examinations of workers in three factories representative of medium-sized enterprises in each of the three main industrial areas, a picture was obtained of worker health and occupational hazards. Recommendations were then planned.

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cent, particularly those in the weaving section. The noise and dust levels were above legal limits, while lighting was below standards.

In March 1981, Dr Malinee and her team were revisiting the factories to inform managers about the training course being offered for first-aid attendants, ask for nominees, and get their input into course content. Courses were also planned for physicians from the factories, the provincial hospital, and private practitioners, as well as for nurses and industrial hygienists. By testing the trainees after their return to work, the impact of the courses will be evaluated.

And because Dr Malinee strongly believes that the drive to increased productivity will continue to exact a heavy toll on workers' lives and health unless factory owners and managers are thoroughly educated, meetings with senior management will be held to increase their awareness of health and safety problems and solutions.

Together with resource persons, representatives of different provincial and national agencies will then draw up a feasible basic model of provincial industrial health services — the first attempt in Thailand to coordinate existing institutions and services at the provincial level.

Thirty years ago, silicosis, heatstroke, occupational poisoning, and skin diseases were widespread in the People's Republic of China. Today, according to Dr Li Shiyou of the Health Research Institute of the Chinese Academy of Medical Sciences, all have been greatly reduced or virtually eliminated.

China's policy is "prevention first". Since the 1950s, the Chinese government has allocated funds for the prevention and treatment of occupational diseases, and scarce materials, such as steel, for producing protective equipment. State industrial and labor departments set safety standards for factories and mines. Safety measures and improvements in working conditions are also included by factories in their yearly production schedules.

Most of China's 29 administrative units — provinces, municipalities, and autonomous regions — have one or more industrial hygiene and occupational disease research institutes as well as special hospitals, sanatoria, and rest centres for workers. In addition, medical centres have been established in large manufacturing firms, says Dr Li. Treatment is generally based on a combination of Western and traditional Chinese medicines.

One of the research institutes, the Beijing Industrial Hygiene and Occupational Disease Research Institute, is staffed by 98 researchers and doctors. Researcher Dr Lu Yongyan says that since the institute was founded in 1962, progress has been made in checking silicosis, the most harmful and "incurable" occupational disease. A lung disease, silicosis results from the inhalation of fine silicon particles.

The institute's researchers recently carried out physical examinations of factory workers in constant contact with toxic materials such as mercury, benzene, chromium, and their derivatives, to determine the incidence of industrial poisoning. Small, poorly equipped factories operated by rural communes were found to be the main sources of infection. As a result, labour protection specialists are now working in the factories to eradicate the sources of poisoning.

Like the Beijing Institute, other occupational research institutes in China often send their researchers to factories and mines to investigate conditions. These professionals also teach workers how to protect themselves against dust, heat, poisoning, and other causes of illness.

The Health Research Institute of the Chinese Academy of Medical Science and other leading research centres regularly sponsor classes to train labour protection personnel and medical staff in industrial and mining enterprises and in communes. All medical colleges have departments of occupational health, says Dr Li.

As a result of investigations conducted in cooperation with technical innovators, industrial hygiene and occupational disease research institutes have designed a variety of effective safety devices appropriate to conditions in China. They include dust testers and removers, radiometers, and instruments for reducing heat, acid, and noise.

Extensive research has been carried out in the areas of lead, mercury, and benzene poisoning. In chemical plants, technicians and workers are looking for new processes to replace the poisonous content of paint spray solvents. In modern plants producing lead, trinitrotoiolene, and other toxic materials, air-tight equipment, remote-control, and mechanized or automated operations are in use.

Particular attention has been paid to the prevention of poisoning in rural areas. At one time poisoning cases increased because of the rise in the use of chemical fertilizers and pesticides and lack of knowledge about their hazards among the farmers. Medical workers now frequently visit rural communes to teach methods of safe application of these chemicals. Rural doctors have been trained to treat these illnesses and safety devices have been designed for the farmers' use. As a result, says Dr Li, acute poisoning cases are now rare and chronic poisoning has been reduced.

Rice growers face different risks. The larvae of parasitic cone snails hatching in flooded paddyfields penetrate the skin, causing an itching inflammation. By adopting deep ploughing methods or applying insecticides, the cone snails and their larvae can be eradicated. Chinese protection specialists have also designed special paddyfield socks to prevent this dermatitis.

As part of the current economic readjustment plan, China has been improving working conditions in mines and factories. The installation of dust, poison, and pollution control devices is now required in all new industrial sites. The Ministry of Metalurgical Industry, for example, plans to spend 20 percent of its capital construction budget for such devices.

Wang Pei
Following the massive inhalation of dust laden with quartz and granite, some South African miners died of silicosis within 35 days. Most workers die for occupational diseases to be recognized in Africa? So it would appear. Apart from a few studies cited here and there, it seems that work-related diseases do not exist in Africa.

"I know there must be some," says Ousmane Ba, work inspector and technical advisor to Senegal's Ministry of Public Service, Employment, and Labour. "Because we don't have any specialists in industrial diseases, we rarely have any cases. This is primarily due to the lack of experts who could identify the origin of illnesses."

Even if the greatest part of their workers are employed in the rural sector, African countries are nevertheless on the way to industrialization. Mines and quarries are often one of the first modern industries to be developed. It is also in these industries that pneumoniosis is most common. A lung disease caused by the inhalation of irritant particles, it is the world's most widespread occupational disease. But precise figures are hard to come by. Except for the Sudan, Tunisia, and Nigeria, few countries have studied the problem.

The Sudan has identified cases of lead poisoning and, in the southeast of the country, symptoms associated with respiratory illnesses have been reported in workers at the Ingasama chrome mine. Air samples revealed excessively high levels of dust in the drilling and loading sections. Based on these studies, carried out in 1978, IDRC supported a more detailed examination. The results are not yet available.

Elsewhere, miners seem free of pneumoniosis, mainly because open-pit mining prevails. Open to the skies, the mines are well aired and the continuous infiltration of water keeps dust levels down. This is the case in Nigeria's Enugu coal mines.

The same situation is found in Senegal's phosphate mines at Taiba, but Dr Idrissa Pouye, physician at the Senegalese Social Security Bank - the organization that pays compensation to victims of work accidents - states that he has seen silicosis and chronic bronchitis in Taiba's miners. And Dr Birane Diouf writes in his thesis on occupational medicine, professional diseases, and work accidents in Senegal - the only such study in the country - that: "In general, the most common complaints are contact dermatitis in cement and oil plant workers, and bronchial ailments in phosphate workers."

One of Dr Pouye's colleagues at the Bank, Dr Badara Diouf, insists that he has never seen any cases of pneumoniosis or silicosis. The occupational diseases that file through his office are most often those affecting crews of fishing vessels. Most common are felonias, severe inflammations of the finger tips resulting from wounds caused by fish scales. Next are cases of gastroenteritis, food poisoning, and food allergies, because "the food is improperly kept on shipboard." Then come cases of dermatitis in cement and fertilizer plant workers, masons, and mechanics.

Senegalese doctors agree that dermatitis is the most widespread occupational disease. Workers are often faced with a dilemma: if they do not wear gloves and boots, they sustain injuries. But wearing gloves and boots, most often made of rubber, is unbearable in the high heat and humidity and can lead to dermatitis.

Oddly enough, even though the Social Security Bank physicians treat occupational diseases, not a single case is recorded in the Bank's accident prevention service, "owners settle informally with the workers - either the company's physician treats the victims, or they are sent to the hospital. We're never informed," Birana Diouf states in his thesis that "the scarcity of occupational diseases in Senegal is simply due to the fact that the most common, contact dermatitis in cement and oil workers, is not entitled to compensation because it doesn't figure on the official list of occupational diseases." Statistics are even scarcer on occupational diseases in rural areas where up to 80 percent of the population is employed. All the physicians agree on the danger faced by farmers who handle pesticides without protection and then often eat without washing their hands. "Unfortunately, says Ousmane Ba, "we don't have any specialists who can identify the role of pesticides in accidents."

In the Ivory Coast, where most plantation workers are temporary migrants from Upper Volta, a new occupational disease has arisen. Spurred by production incentives, workers drug themselves in order to work longer hours. They are often so highly drugged that the government of Upper Volta has opened a rehabilitation centre where they are treated on their return home.

Work inspection services are also inadequate in most African countries. Often they don't have any vehicles or monitoring devices, and their role is limited to trying to clean up after serious accidents have occurred. According to Thierno Danfa, accident prevention and occupational health services in the countries he knows are at their embryonic stage.

Only Mali, where all factories have their own health and safety committee, escapes his criticism. "There, everyone is sensitized," he says. "Even if they are illiterate, workers know how to make suggestions for improving working conditions." But is anyone listening?

Jean-Marc Fleury

Africa is on its way to industrialization, but health services have not kept pace.