Asbestos: old foe in 21st century developing countries

Abstract

While use of asbestos materials in developed nations has been decreasing because of the harmful health effects of asbestos dust mining, processing and use of the ancient material in developing countries is increasing. The regulatory mechanism for use, handling and disposal of asbestos and associated waste in developing countries are weak and information on asbestos-related diseases is scanty but emerging. We identify lack of epidemiological data on asbestos health effects as a major gap to be bridged in the promotion of occupational and environmental health in developing countries. Without data on local situations, diseases such as asbestosis and mesothelioma remain too obscure to assist the campaign for appropriate regulation of asbestos usage or attracting attention to abominable industrial practices generally.

Keywords: Asbestos; Environmental health; Occupational safety

1. Introduction

Whereas asbestos materials have been used for over a millennium, mounting evidence for respiratory diseases associated with occupational and environmental exposure to asbestos fibers has led to diminishing demand for products containing the fibers (Virta, 2002). In developed nations, where use of asbestos products is either banned or very restricted (ILO, 1984; Becklake, 1998; US Environmental Protection Agency, 2000; ILO, 2001; ICFTU/TUAC, 2002), requirements for proper handling, use and disposal of asbestos are backed by compensation schemes and frameworks for expensive punitive litigation for offenders (Chemistry in Britain, 2001). In addition to assisting victims of past asbestos exposure and their families these measures, having generated a vibrant and aggressive litigation industry, have served as vital enforcement and compliance tools for asbestos health and safety regulations.

These measures and the ban asbestos movement (Ban asbestos, 2002) have been so successful in developed countries that the large USA asbestos deposits remain unexploited (Virta, 2002) while Canada is the only developed country that produces, almost entirely for export, significant quantities of asbestos fibers. In 2000 Canada, the second largest producer (behind the Commonwealth of Independent States, CIS) and the world’s leading exporter of Chrysotile, produced approximately 18% of the world’s Chrysotile (Virta, 2002). Much of the rest (≈74%) came from four developing countries—China, Brazil, Zimbabwe and Kazakhstan (≈38%) along with the economically depressed CIS (≈36%) (Virta, 2002).

The success of the international ban-asbestos lobby, especially in Europe (Ban Asbestos Europe, 2002), is viewed as a major reason for the gradual decline in global Chrysotile asbestos production—with 2000 levels estimated to be 13% lower relative to those of 1995. Accordingly, Canadian Chrysotile production over the same period fell by approximately 34%. However, in sharp contrast to this trend, Chrysotile production levels in the CIS
were expected to increase by 10% while that of Brazil remained essentially unchanged. The production levels in China were also expected to remain unchanged relative to 1995 levels but production levels had increased by 19% in 1998 before dropping back to the 1995 level. Additionally, significant reduction in Chrysotile asbestos production among other developing countries has occurred in Zimbabwe (35%) and, more dramatically, in neighboring South Africa (79%). However, South Africa has had a much publicized major asbestos pollution and asbestos-related disease problem that is being openly tackled, including by use of litigation. China, Brazil and the CIS have significant local markets for their asbestos while more developing countries such as Thailand, India, South Korea and Iran are major importers of asbestos. For example, the 17 top Chrysotile asbestos consuming countries, consume 20 000 or more tones of Chrysotile asbestos to reach a cumulative total of 2 021 000 tones (Asbestos Institute, 1999). To this total, developing countries contributed 45% and CIS 35%; consumption in individual developing countries was: China (11%), Brazil (9%), Thailand (8%), India (6%) and Iran (4%).

The emerging picture therefore, is that of major asbestos mining, processing and manufacturing installations flourishing in developing countries while in developed nations, they are under intense public pressure to cease activity altogether.

2. Asbestos usage in developing countries

There are over 3000 different types of commercial products containing varying concentrations of asbestos depending on ultimate usage. Asbestos products still popular in developing countries include construction products such as roofing and siding shingles, asbestos cement pipes, materials used in stoves, vinyl carpets and floor tiles. There are also other products used in soundproofing (lecture theatres), thermal insulation (e.g. hot water and steam pipe) and fireproofing (e.g. in bank vaults), adhesives, fillers, brake shoe and clutch linings, floor tiles, and several textile products.

The continued use of asbestos in developing countries, notwithstanding increasing support for the ‘ban asbestos’ campaign in developed countries and more recently in some developing ones too, is misguidedy justified for the industrially desirable characteristics (high tensile strength, fire and heat resistance) of the asbestos fibers and their relatively low cost. While we believe that eventually asbestos should be replaced by less harmful materials, our principle concerns with asbestos usage and pollution in developing countries relate to improper use, handling and disposal of asbestos, asbestos containing materials and waste. In this regard, there is evidence that asbestos plants in developing countries are run without proper safety procedures (Sunday Times, 2000; Iran Daily Newspaper, 2001).

3. Asbestos exposure in developing countries

There is no doubt that developing countries have many serious economic, social and political problems. When governments and nations with inadequate resources have to deal with socio-political challenges presented by the HIV/AIDS pandemic, debilitating diseases like malaria; water bone diseases associated with consumption of untreated water and shortage of decent shelter, occupational and environmental pollutants that are perceived to be killing relatively few people over a long period of time are unlikely to receive priority attention. Low attention to such problems means that the full impact of adverse health effects of occupational and environmental exposure to potentially harmful pollutants remains largely obscure. Most importantly, low attention levels to occupational health and safety means that: (a) regulatory procedures may be non-existent or not enforced; (b) mechanisms for identifying injuries, ailments and deaths arising from occupational exposure to harmful materials may not be in place; and (c) precautionary measures that could save lives may not be adopted at the work place. Thus, the relative paucity of documented asbestos diseases in developing countries does not at all mean that these diseases are minimal nor does it mean that these countries are practicing safe asbestos use, handling and disposal procedures. Asbestos-
related disease incidents are low in developing countries because epidemiological questions of this nature have not been systematically researched in many of those countries.

For example, a report (Mitchev, 2001) to the Annual Congress of the European Respiratory Society, held in September 24, 2001, indicates that ‘one in seven people in western societies may have been adversely affected by exposure to asbestos’. In just this one study, researchers performed 160 autopsies at the Erasmus Hospital in Brussels between 1998 and 2000 and found ‘pleural plaques’ in 14% of the women, and in 20% of the men’. Such intense studies have not been reported for developing countries, except South Africa (Kielkowski et al., 2000), where over 7500 sufferers of asbestos-related diseases have been identified. Thus, while asbestos usage in developing countries has been known for a while and is increasing, information about concomitant health effects is limited because research activity in these areas has been low. Within this regime of poorly understood ill-health effects of asbestos use in developing countries, promotion of asbestos usage by business interests and those trying to escape responsibility for past bad asbestos handling practices flourishes unchallenged. It must be noted that even in developed countries with significant cases of asbestos-related diseases, better monetary resources, regulatory frameworks and compensation mechanisms, there are persistent difficulties faced by asbestos victims in seeking and receiving compensation, healthcare and protection from other employers or owners of offending manufacturing plants (Workers Online, 2001). It is therefore conceivable that the challenges faced by asbestos victims and their governments are more formidable in developing countries, where asbestos is still marketed aggressively (IBAS, 2002) and utilized, while regulations and controls are not as good as those of developed countries. In such a confused state, advocates and luminaries of occupational and environmental safety and health can find it hard to operate. At best, they can be readily ignored or dismissed as media attention seekers and at worst harassed with considerable career ending possibilities as was the case for Dr Joshi, an Indian advocate of banning asbestos (Kazan-Allen, 2002).

4. Questioning the perception of ‘jobs or health’

Amazingly, the issues of jobs or health can be very touchy in developing countries. Recently, the Zimbabwe Congress of Trade Unions (ZCTU) had to defend itself against charges that it backed a ban asbestos call at the 2002 International Labour Organization (ILO) conference (The Zimbabwe Independent, 2002). In denying the allegations the ZCTU officials claimed that to the contrary, ‘the African group agreed that asbestos should not be banned until there was scientific proof of its harmfulness’. The ZCTU official also added that ‘everyone from Zimbabwe agreed that we cannot just have our people thrown out of their jobs before there is scientific evidence of asbestos harmfulness’. With all the evidence available globally and, in particular, from neighboring South Africa and Swaziland, it is not clear what kind of scientific evidence Zimbabwe can be waiting for before acknowledging the health dangers associated with improper asbestos mining, processing, handling and disposal. While acknowledging the potential of asbestos to cause harm Madava of the Southern Africa News Features (Madava, 1999) also lamented the imminent collapse of South African and Zimbabwean economies because of the global asbestos ban. But the report also stated that authorities in Zimbabwe have in recent times ignored health complaints from residents of areas near asbestos mines. One would have expected the health complaints to be investigated and acted upon in some way that satisfies both health/safety and economic concerns; but economic considerations clearly seem to be overwhelming.

A further example of economic considerations overwhelming health concerns, is found in the dangerous shipbreaking practice which has been reported in several developing countries (Kanthak and Jayaraman, 2001). Shipbreaking is carried out by ill-informed workers under poorly regulated conditions without due regard to proper health safeguards for both the workers and the environment. The operations are so unsafe that asbestos
is reported to have been found in workers’ residences!

5. Misconceptions about the cost of proper asbestos management

The view that the management of occupational and environmental health is tremendously expensive is totally misguided, and is better replaced by the belief in, and adoption of, the maxim ‘prevention is better than cure’. This in our view is especially pertinent in the case of asbestos use in developing countries. Technologies for reducing airborne asbestos dust levels by wet methods, excluding asbestos fibers from inhaled air using durable facemasks and disposal of asbestos by burial are simple, cheap and available. Thus, deaths and ill-health miseries associated with preventable asbestos-related diseases in developing countries are unacceptable and cannot be justified by poverty.

What is brazenly dangerous is the accommodation of unsafe practices in asbestos mining, processing and manufacturing activities as well as improper handling and disposal of asbestos waste, which in developing countries seems to be the result of a complex web of factors. Poverty is of course overarching, but other important factors are: unavailability of information on asbestos-related diseases among the exposed local population, inadequate dissemination of information on adverse health effects of asbestos, ignorance of or non-compliance with simple worker protective measures, lack of resources to implement relevant legislation, callous attitudes of those who know better and lack of punitive and litigation possibilities. Accordingly, unsafe mining, processing, use and disposal of asbestos in developing countries are wide spread, and so are helpless victims, who in some cases are reported to have lost their jobs once they were diagnosed with asbestos-related disease. Better-documented examples are found in South Africa, (Kielkowski et al., 2000) and Swaziland (Coakley, 2000). For the Caribbean Region, recent reports and studies of asbestos-related problems and have included Jamaica (Reid and Kahwa, 1995) and US Virgin Islands (Weekend Observer, 2002). Asbestos-related diseases were reported in Brazil (Cauchon, 1999), China (Sun et al., 2001; Wen et al., 2001a,b), Iran (Koorosh, 2001), Uruguay (De Stefani et al., 1996) and other developing countries (Cauchon, 1999).

Some asbestos multinational companies have abandoned their mining or manufacturing operations in developing countries, leaving behind dangerous improperly disposed asbestos waste, which pose health hazards for innocent and, often, unsuspecting citizens. It begs the question—who is going to accept responsibility, in developing countries, for adverse health effects caused by asbestos after these companies are long gone. These are not just distant probabilities as children playing on abandoned dump heaps in South Africa (Hazards Magazine, 2001) and Jamaica can attest (Fig. 1).

Fig. 1 shows children in a squatter family compound in Jamaica located on a former asbestos waste dump, polluted with asbestos cement waste, including crocidolite. The dangerous waste was left behind when two asbestos-cement plants operating in Jamaica were closed in the early 1980s due to pressure from trade unions and environmental NGOs.

What the above account suggests is that the true cost of improper mining, processing, handling and disposal of asbestos and asbestos waste in developing countries is likely to be much higher than the cost of putting in place the necessary controls.

6. Managing the risk of asbestos in developing countries

There is some good news in the asbestos pollution problem in developing countries. A cultural transformation, which promotes occupational health and safety as well as environmental health, is possible and the asbestos pollution problem appears to be a simple, readily comprehensible and an effective educational tool for this transformation. A reflection of this in Jamaica is the collaboration between the University of the West Indies, Mona Campus (UWI) and the Jamaica Confederation of Trade Unions (JCTU) to implement a series of workplace workshops on the asbestos pollution identified in an earlier study by UWI researchers (Reid and Kahwa, 1995). The workshops have focused especially on health
effects of asbestos, relevant personal protection procedures and devices, management of old asbestos installation and a review of relevant ILO conventions, as well as other related environmental conventions and standards. Funding for this project came from the Environmental Foundation of Jamaica (EFJ), a non-governmental organization in Jamaica, with technical support from ILO, (its Workers Division Branch and the Caribbean Office). Local professional support also came from Industrial Safety professionals and Environmentalists from the Ministry of Health, the trade union movement, the Departments of Chemistry and Community Health and Psychiatry of the UWI, the Ministry of Labour and the National Environment and Planning Agency.

This project, in fact, is part of greater alliance between the UWI and JCTU aimed at addressing occupational safety and health concerns in the Caribbean region. This is a unique collaboration, as it is the first time that workers and the academic community in Jamaica are specifically focusing, by way of a seminar series, on addressing safe use, handling and disposal of asbestos. The main objectives and components of this joint UWI–JCTU Enterprise-based educational project are to: (a) print and distribute educational materials on the health risk of asbestos; (b) promote safe use, handling and disposal of asbestos; (c) raise concerns about asbestos problems and foster new ways of thinking among trade union members, management and the public by linking job security with occupational and environmental health; (d) assist participants in identifying suspect asbestos and asbestos containing materials.

We found workers, including those who handle asbestos products regularly, to be very ignorant of asbestos dangers; less than 20% of the participants were somewhat aware or had seen some of the relevant information we have repeatedly published in both print and electronic media. In many cases, the workers’ expression was one of anger and disgust when the magnitude of the occupational health risks they have taken over time in their careers became clear. But enthusiasm for and better understanding of the subject matter quickly followed this; a willingness to take and effect required corrective measured was something easily grasped by the workshop participants. Most importantly the workers displayed a clear desire to use the information gathered at the workshops to put in place occupationally healthy and secure workplaces for future generations of workers, even though clearly the life-saving information may have come too late for them. ‘We are walking dead because of asbestos but our children should
not’, said many of the participants. The participants’ support and favourable response to this project, has provided a natural lobby base for the next phase of the programme, in which we shall press the state to comply with and ratify all the ILO conventions on asbestos, occupational safety and health as well as other environmental standards and convention.

7. A culture of occupational and environmental health and safety

We thus believe that a culture that promotes the concept of a safe workplace in developing countries is achievable. However, the paucity of quantitative data on the local impact of occupational malpractices on workers’ and environmental health in developing countries makes the asbestos (and other pollution) problems appear deceivingly minor than they possibly are. Without firm occupational health data it is difficult to convincingly demonstrate the need and urgency for managing the asbestos and other occupational safety and health problems. Advocates of the ban asbestos movement or its safe use who are armed with just anecdotal evidence may easily be dismissed as mischievous and irrelevant to the ‘tough development struggle’. Further, new research approaches are needed because government-run reporting mechanisms may not be working well. For instance, in Jamaica, reporting of asbestos related diseases to the Ministry of Labour is mandatory. However, official ministry records show no case of occupational asbestosis while at least two cases of locally contracted occupational asbestosis are known (Reid and Kahwa, 1995). Refereed journal reports on the extent of the asbestos pollution problems in developing countries and their health effects are few; much more effort is required to build reliable data banks on occupational and environmental health and safety in developing countries.

International agencies such as the ILO, the World Health Organization (WHO), the World Bank, the United Nations Environment Programme (UNEP) and philanthropies can help enormously by assisting local organizations, NGOs and university researchers in developing countries to obtain firm independent occupational health data and use them to educate, mobilize and assist workers and businesses to promote workplace safety and health. This is one way the developing world can be assisted to obtain, learn and use scientific information to transform national life and protect workers’ and environmental health.

8. Prevention and compensation

It can only be fair that the principle that ‘polluter pays’ be upheld, even if the polluter may have migrated to other countries. It is therefore gratifying that the 7500 South African sufferers of asbestos related diseases successfully took their case to Cape plc’s UK home base and got serious legal attention and recently obtained settlement, albeit a symbolic one (ACTSA, 2001). Encouraged by these developments 450 asbestos related disease sufferers in Swaziland have sought compensation from an asbestos mining international company that left Swaziland in the early 1980s (Coakley, 2000). In this regard, the globalization of the asbestos litigation industry (Global Attorney, 2002) is a welcome development for sufferers of asbestos-related diseases in developing countries, especially when offending multinational companies, which are traceable to their home base anywhere in the world, are involved. After all, global free trade and investment ought to come with global responsibility!

It is plausible, that attorneys in small developing economies require mutual accommodation with major companies and governments for business survival. Thus, local attorneys with entrenched interests in government and private sector businesses might value such relationships more than representation of poor sufferers of asbestos-related diseases. Further, governments with poorly managed asbestos installations may have an interest in not vigorously pushing for promulgation, implementation and enforcement of serious asbestos regulatory frameworks. For example, of the 175 ILO member states, only 26 have ratified the ILO Asbestos Convention No. 162 and indeed only 37 countries have ratified the Occupational Safety and Health ILO Convention No. 155 (Occupational Safety and Health Convention, 1981) (ILO, Con-
ventions, 2002). This is further compounded by a similar pattern of non-ratification, particularly in developing countries like Jamaica, of other international standards, including the Basel Convention on the Transboundary Movement of Hazardous Waste and their Disposal (Basel Convention, 1992) and the Rotterdam Conventions on Prior Informed Consent Procedure for Certain Hazardous Chemical and Pesticide in International Trade (Rotterdam Convention, 1998).

It would be interesting to establish why these Conventions have not been ratified by developing countries and what would happen if they were ratified and implemented. In developed countries there are several mechanisms for the protection of the environment and worker health, so the negative impact of unratified ILO conventions is less dramatic because information is more readily available and meritorious justice can still be achieved through the courts. But in developing countries with emerging democratic and governance structures it is the governments that workers and citizens can look to for protection from occupational and environmental hazards. When government-run operations are themselves hazardous and protective legislations are not promoted, citizens’ health is likely to be compromised. Ironically, ILO conventions offer a cost effective basis for occupational safety and health policy initiatives because poor countries do not have to pay for the requisite research. The requisite data are usually available through ILO background studies and the ensuing tripartite (Trade Unions, Employers and Governments) discussions, which lead to the adoption of convention proposals at annual International Labour Conferences. Thus, ILO conventions not debated and ratified by developing countries represent a wasted critical opportunity for people in these countries to learn safe occupational and environmental practices and use them to improve their well being. ILO Convention No. 162 has not been taken up by many developing countries; ILO should seek to establish the social cost of this indifference. Even more disappointing is the fact that organizations, like the ILO, do offer technical assistance to those countries wishing to put their houses in order as well as effect administrative and legislative changes to facilitate compliance with these conventions. Often countries undertake the initial approach in preliminary fact-finding conferences and workshops, but fail to sustain their efforts to the end to ensure ratification.

For all of these reasons, activities of experienced aggressive international asbestos attorneys in developing countries are a welcome development at this time, even though they might regrettably be a potential drain of funds from poor to rich countries. International litigation activities stand a better chance of changing key institutional dynamics in the asbestos pollution issue and cultivate more responsible occupational and environmental health practices in developing countries. Governments that fail to put in place protective regulations for workers and the public should also be targeted for litigation. Ignorance should no longer be a valid excuse at that level, even though there may be plenty of it.

9. Conclusion

Asbestos mining, processing and usage are increasing in developing countries, yet the health impact of these activities remains obscure. This obscurity enables the pro-asbestos businesses to mount poorly challenged promotions (The Financial Gazette, 2001; Ramaseshan, 1995) of asbestos use while weakening the case for regulating asbestos usage. Epidemiological studies seeking to establish reliably the health effects of asbestos mining, processing and usage in developing countries are needed. It is results of such studies that will galvanize people and their institutions and into making a persuasive case for legislative reforms that protect the environment and workers from asbestos and other pollutants. International agencies and philanthropies can help greatly to assist people working under difficult and sometimes risky conditions to get the essential epidemiological data and take the message of their findings to the people and galvanize them to take corrective action.

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Ban Asbestos Europe. Member countries are free to enforce bans before the 2005 target date. In fact bans have already been implemented in Denmark, Finland, Belgium, Austria, France, Germany, Italy, the Netherlands, Sweden and Great Britain. 2002.


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