

# Chapter 2

## An Exploration of Measures Against Industrial Asbestos Accidents\*

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### 2.1 Industrial Asbestos Accidents and the Status of Current Countermeasures

#### 2.1.1 *The Status of Asbestos Exposure and Relief Measures*

In June 2005, three mesothelioma-afflicted residents of the community surrounding Kubota Corporation's Kanzaki Factory, together with their support groups, filed charges demanding that Kubota assume responsibility for their exposure to asbestos. Although Kubota had offered relief money for work-related illnesses stemming from asbestos exposure, it was shocked by the level of asbestos exposure and harm that local residents had experienced, and was therefore prompted to go public with details surrounding the extent of asbestos-related contamination from its manufacturing facilities to date, and the status of related relief efforts. Popularly dubbed "the Kubota Shock," this event set the stage for a sweeping public policy response. From the 1970s to the present day, there had been repeated incidents of harm from exposure to asbestos in Japan, a health issue that called for all-out countermeasures. Despite that reality, within less than half a year in each case, coverage of these events in newspapers and other media faded away, and fundamental remedial measures were never taken. However, the Kubota Shock itself compelled not only Kubota, but also many other companies involved in the asbestos industry, to publicly disclose details about incidents of industrial contamination, study the impact on local citizens, and implement relief measures accordingly. As of March 2010, 391 people had

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become victims of asbestos contamination by Kubota, and 344 had died. (Of the total number of victims, 221 were local residents near Kubota facilities, including surviving family members, and 190 had already died.) Kubota negotiated with a group of victims and provided individual relief money packages which were equivalent to those usually paid out to the victims of industrial accidents, and which ranged in scale from 25 to 46 million yen each.

The industrial accident reports released by Kubota left local citizens in a state of shock. In brief, from 1957 to 1975, Kubota had utilized around 90 000 metric tons of crocidolite (blue asbestos) in its operations, and of the 251 workers who had been engaged in its asbestos cement pipe manufacturing process for a period of 10 years or more, 120 had become ill and 61 had died. In an announcement released at the time of its interim financial report in March 2010, the company disclosed that 144 former employees had died from asbestos-related causes and that another 26 were undergoing treatment. These numbers underscored a state of devastation virtually analogous to total annihilation in a war zone. Further, studies by Norio Kurumatani and Shinji Kumagai demonstrated a clear link between cases of mesothelioma among local residents and the asbestos contamination caused by Kubota. However, Kubota has denied responsibility for the contamination, and has offered relief funding instead of damage compensation.

In a related development, in February 2006 the government, responding to the outcome of public opinion polls, enacted the “Act on Asbestos Health Damage Relief” (hereinafter referred to as the “Asbestos Relief Act” or “New Act”). This constituted a legislative step to provide blanket protection for cases of asbestos contamination and victims thereof who were not deemed to be eligible for workers accident compensation. From FY 2006 through FY 2009, 6,205 patients were approved for coverage under the New Act, and of those, 2,969 died. These examples of relatively quick action by Kubota and the national government demonstrated that they had learned lessons from the Minamata disease and other renowned cases of industrial pollution from years past, and had effectively deflected the societal condemnation that may have resulted from a drawn-out legal dispute. Nevertheless, Kubota and the government have not acknowledged asbestos contamination to be a case of industrial pollution or accepted legal responsibility, and have only offered money as a form of relief rather than as payment for damages. These details illustrate that the lessons of Minamata disease and other environmental disasters have yet to be fully applied, and highlight many questions surrounding government policy on future asbestos disasters which are expected to surface in the years ahead. This chapter seeks to shed light on recent industrial asbestos accidents and the status of relief measures following enactment of the New Act.

Table 2.1, which was compiled by Ban Asbestos Network Japan (BANJAN), lists recent trends in compensation and relief for patients afflicted with mesothelioma or asbestos-induced lung cancer. The mesothelioma data in the table are estimates because no statistical records exist prior to 1994. Further, in keeping with the Helsinki Criteria, asbestos-induced cancer rates are estimated to be double those for mesothelioma. Although the resulting relief compensation rate under the New Act has increased, the approval and relief compensation rate for patients who have died of mesothelioma has leveled off at 36.5%. For lung cancer, the approval and relief

**Table 2.1** Trends in compensation and relief for patients afflicted with mesothelioma or asbestos-induced lung cancer (until March 2008)

<i>Mesothelioma</i>													
<i>Death</i>	-1994	-2004	2005	2006	2007	Unknown	Total	Percentage	Death before 2007	Relief % 100%	Death (unknown year)	Relief % 100%	Death in Survivor 2008
	3 685	7 013	9 111	1 050	1 068	-	13 727						
Workers' compensation	83	419	502	1 001	500	-	2 505	40.2 52.3	1 906	13.9%	95	14.6%	24
Ship workers' compensation	-	4	19	-	8	-	31	0.5	25	0.2%	3	0.2%	0
Past National Railway worker' compensation	-	2	11	20	18	45	96	1.5	79	0.6%	0	0.6%	6
Other compensation	-	1	-	4	2	2	9	0.1	7	0.1%	2	0.1%	0
"New Act" litigation relief	-	-	-	570	46	-	616	9.9	616	4.5%	0	4.5%	0
"New Act" death cases	-	-	-	1 538	279	-	1 817	29.2 47.7	1 817	13.2%	0	13.2%	0
"New Act" survival cases	-	-	-	627	525	-	1 152	18.5	-	-	464	3.4%	688
<b>Total of compensation or relief</b>	<b>83</b>	<b>426</b>	<b>513</b>	<b>3 779</b>	<b>1 378</b>	<b>47</b>	<b>6 226</b>	<b>100 100</b>	<b>4 450</b>	<b>32.4%</b>	<b>564</b>	<b>36.5%</b>	<b>1 182</b>

<i>Asbestos-induced lung cancer</i>													
<i>Death</i>	-1994	-2004	2005	2006	2007	Unknown	Total	Percentage	Death before 2007	Relief % 100%	Death (unknown year)	Relief % 100%	Death in Survivor 2008
	7 370	14 026	1 822	2 100	2 136	-	27 454						
Workers' compensation	120	234	213	783	502	-	1 852	70.1 85.5	1 069	3.9%	159	4.5%	15
Ship workers' compensation	-	-	14	-	10	-	24	0.9	17	0.1%	0	0.1%	0
Past National Railway worker' compensation	-	-	-	10	17	33	60	2.3	45	0.2%	0	0.2%	5
Other compensation	-	-	-	1	1	1	2	0.1	1	0.0%	1	0.0%	0
"New Act" litigation relief	-	-	-	272	49	-	321	12.2	321	1.2%	0	1.2%	0
"New Act" death cases	-	-	-	52	41	-	93	3.5 14.5	93	0.3%	0	0.3%	0
"New Act" survival cases	-	-	-	172	117	-	289	10.9	-	-	116	0.4%	173
<b>Total of compensation or relief</b>	<b>120</b>	<b>234</b>	<b>213</b>	<b>1 304</b>	<b>736</b>	<b>34</b>	<b>2 641</b>	<b>100 100</b>	<b>1 546</b>	<b>5.6%</b>	<b>276</b>	<b>6.6%</b>	<b>799</b>

(continued)

**Table 2.1** (continued)

Total (mesothelioma and asbestos-induced lung cancer)														
Death	-1994	-2004	2005	2006	2007	Unknown	Total	Percentage	Death before 2007	Relief %	Death (unknown year)	Relief %	Death in 2008	Survivor
	11055	21039	2733	3150	3204	-	41181			100%		100%		
Workers' compensation	203	653	715	1784	1002	-	4357	49.1	62.2	2975	254	7.2%	39	1089
Ship workers' compensation	-	4	33	-	18	-	55	0.6	42	0.1%	3	0.1%	0	10
Past National Railway worker' compensation	-	2	11	30	35	78	156	1.8	124	0.3%	0	0.3%	11	21
Other compensation	-	1	-	5	2	3	11	0.1	8	0.0%	3	0.0%	0	0
"New Act" litigation relief	-	-	-	842	95	-	937	10.6	937	2.3%	0	2.3%	0	0
"New Act" death cases	-	-	-	1590	320	-	1910	21.5	37.8	1910	0	4.6%	0	0
"New Act" survival cases	-	-	-	799	642	-	1441	16.3	-	-	580	1.4%	-	861
Total of compensation or relief	203	660	726	5083	2114	81	8867	100	5996	14.6%	840	16.6%	50	1981

*Source:* Data from Ban Asbestos Network Japan (BANJAN)

*Note:* Data of "Past National Railway Worker' Compensation" is until 7 November 2008

compensation rate for asbestos-induced lung cancer patient deaths has not risen beyond 6.6% relative to Helsinki Criteria estimates, which is partly due to the difficulties involved in screening. The comparable estimate for both illnesses combined is 16.6%. As this table illustrates, details about a previously hidden fraction of the population victimized by asbestos contamination have come to light in the aftermath of the Kubota Shock. Whereas the number of patients approved for benefits under accident compensation insurance totaled 42 (25 mesothelioma patients and 17 lung-cancer patients) in 1999, the corresponding total in 2004 came to 186 (128 mesothelioma patients and 58 lung-cancer patients). Furthermore, in 2006 the combined number of patients approved for benefits under workers accident compensation insurance rose to 1 783 (1 000 mesothelioma patients and 783 asbestos lung-cancer patients), and under the provisions of the New Act, the combined total has reached 3 230. Accordingly, the total for mesothelioma and asbestos-induced lung cancer patients together with deaths caused by asbestos rose to 5 013. This represents a 120-fold increase on the corresponding figures from 7 years earlier, and a 27-fold increase on the figures from just 2 years earlier. Under the New Act, relief money has also been provided to 841 patients who would otherwise have been ineligible because they had received relief money under the provisions of the earlier statute of limitation. Although there was a surge in applications for approval when the act initially came into effect, it is now known that both illnesses claim the lives of at least 2 000–3 000 patients per year. One explanation is that the effects of asbestos exposure are not as readily apparent as the effects of other forms of industrial pollution owing to the relatively lengthy period from initial exposure to the development of symptoms in those affected. On a more fundamental level, though, the statistical trend seems to highlight how seriously negligent the corporate sector and national government have been with regard to implementing effective countermeasures. What is more, there is much that still remains beneath the surface. Needless to say, in the current situation, few surrounding residents are certified as asbestos pollution victims, and perhaps only 10% of all mesothelioma patients are approved for workers accident insurance benefits. It is believed that many patients with asbestos-induced lung cancer have been treated as though their use of tobacco was the prime cause of their illness (see BANJAN 2007a, b and Table 2.1).

The manifestations of asbestos exposure and consequent harm were this extensive after the Kubota Shock and the implementation of follow-up countermeasures. It may be one of the iron-clad empirical rules of conduct in cases of industrial pollution that unless and until victims speak up, seek recognition of their status as victims of industrial pollution, and bring charges against the perpetrators, the industrial pollution (or more broadly, industrial accidents) in question will not be brought to light. This state of affairs illustrates the societal discrimination that victims experience and the courage they need in order to assert their human and civil rights. In addition, within the context of asbestos contamination and disasters, insights into the actual numbers of victims are hindered by the facts that symptoms typically begin to appear long after the asbestos exposure, and that patients often die soon after their symptoms become manifest. The three courageous victims who initially spoke out in the Kubota case have already passed away, but their courage has aided many other victims to obtain care and assistance.

Given that backdrop, we now consider the factors that created so many victims. Table 2.2 lists factory facilities with emissions of specified particulates, and industrial sectors that experienced industrial accidents prior to 2004. Cases of certified workers accidents (in FY 2005 and FY 2006) spanned numerous industries, with 1 414 cases in the construction sector, 1 680 cases in the manufacturing sector, 97 cases in the transport sector, 34 cases in the power, gas, water, and heating sectors, and 149 cases in other fields. The manufacturing sector had many certified cases, with shipbuilding operations (211 businesses) accounting for 459 cases, ceramics operations (128 businesses) having 303 cases, the transportation equipment sector (88 businesses) having 205 cases, machinery and equipment manufacturing operations (81 businesses) having 140 cases, and chemical manufacturing (69 businesses) having 117 cases. A total of 2 514 businesses reported certified workers accidents involving asbestos exposure in FY 2006. Table 2.3 lists certified cases reported under the New Act, prefecture by prefecture, from April 2006 through July 2010.

**Table 2.2** The number of compensation or relief cases about asbestos exposure work by industry (April 2005 – March 2007)

	Business establishments	Workers' compensation	New Act relief	Total of compensation and relief
Construction	1 356	1 130	284	1 414
Mining	8	3	5	8
Manufacture	918	1 159	521	1 680
Transport	83	74	23	97
Electricity, water, or energy supply	26	22	12	34
Other	123	112	37	149
Total	2 514	2 500	882	3 382

Source: Ministry of Health, Labour, and Welfare in March 2008

**Table 2.3** The state of relief (New Act) by prefecture in Japan (April 2006 – July 2010)

Prefecture	Patient application	Death before act enforcement	Death or no application	Total
Hokkaido	109	114	9	232
Saitama	180	175	5	360
Chiba	104	109	8	221
Tokyo	257	254	16	527
Kanagawa	194	211	12	417
Shizuoka	73	82	7	162
Aichi	138	112	8	258
Osaka	325	299	18	642
Hyogo	336	306	5	647
Hiroshima	76	89	4	169
Fukuoka	130	111	7	248
Total in all prefectures (including the other 36 prefectures)	2 912	3 061	173	6 146

Source: Environmental restoration and conservation agency of Japan in August 2010

Accidents with 100 or more victims occurred chiefly in metropolitan areas, with Hyogo Prefecture accounting for the largest number, 647 cases, followed by Osaka with 642 cases, Tokyo with 527 cases, Kanagawa with 417 cases, Saitama with 360 cases, and several other prefectures with 100 cases or more. Victims of such workers accidents were reported in all 47 prefectures nation-wide. A breakdown of the number of victims reported to the Ministry of Health, Labour, and Welfare (MHLW) encompassed an exceptionally broad cross-section of industry. Accordingly, occupational exposure was not limited to workers or employees in manufacturing companies directly involved in the utilization of asbestos, such as Kubota or the NICHIAS Corporation. Victims of exposure also included dock workers and truck drivers involved in the handling or transport of asbestos cargoes, workers who handled merchandise containing asbestos, workers engaged in the repair of buildings, joinery, and electrical, gas, and plumbing fixtures, bakers and other workers engaged in food preparation, structural demolition workers and other specialized workers engaged in the disposal and processing of spent asbestos products, and even stage technicians. As mentioned earlier, the official statistics indicate that only a small fraction of workers harmed by asbestos exposure have been approved to receive benefits under workers accident compensation regulations. Other than a small number of individuals living in the vicinity of the Kubota or NICHIAS facilities, little is known about family members of workers who have not been approved for benefits, or of other indirect victims or victims of industrial pollution. In addition, only a small percentage of actual cases have been brought to light owing to the tendency among members of the corporate community to cover up incidents of industrial accidents or pollution, as exemplified by the incidents involving the Chugoku Electric Power Co. Inc., or residents living in the vicinity of the NICHIAS Corporation's Hashima factory in Gifu Prefecture. Furthermore, if the public should lose interest in such events, there is a risk that studies of the levels of contamination and harm to local residents may lose momentum or come to a standstill (Tables 2.2 and 2.3).

The New Act constitutes an emergency first-aid measure and is significantly flawed in certain areas because it was designed as a measure to win public support. Table 2.4, which was compiled by BANJAN, compares workers accident compensation benefits with assistance provided under the New Act. The single largest issue was that the New Act limited assistance to victims of mesothelioma and asbestos-induced lung cancer, and excluded victims of pulmonary asbestosis who were eligible for benefits under workers accident compensation insurance. However, asbestos exposure together with a considerable disorder of pulmonary function was added to the subjects covered by the New Act in July 1, 2010. Pulmonary asbestosis patients in the Sennan district of Osaka Prefecture have filed a lawsuit seeking damage compensation from the national government. Their relief amounts are extremely small compared to the relief money and accident compensation amounts received by victims of Kubota's asbestos contamination. Immediately following enactment of the New Act, many victims filed applications for relief. After 1 year, though, the flow of applications slowed. One reason is that applicants with asbestos-induced lung cancer are required to submit documentation delineating how their illness differs from other forms of lung cancer. Gathering such documentation is

**Table 2.4** A comparison of workers accident compensation and relief money under the New Act

Funding source	Relief money under the New Act		
	Workers accident compensation	Survival cases	Death cases prior to enactment of the law
Implementing agency	Workers accident compensation insurance National government Labor standards supervision office	Asbestos health damage relief foundation (general + special contributions)	Environmental Restoration and Conservation Agency of Japan (ERCA) Organization office, local environmental management offices, community health centers
Applicable period	In principle, applied retroactively from the initial date of diagnosis; no provisions for fixed duration	Applied from date of application for an effective duration of 5 years after approval. (Renewable for patients with no prognosis of cure) <sup>b</sup>	
Medical conditions covered.	(1) Mesothelioma, (2) lung cancer, (3) pulmonary asbestosis, (4) benign asbestos pleural effusion, (5) diffuse pleural thickening, (6) other medical conditions that are clearly linked to work involving exposure to asbestos	Designated diseases: (1) mesothelioma, (2) lung cancer, and (3) any other disease caused by inhaling asbestos and designated by Cabinet Order: (a) pulmonary asbestosis with considerable disorder of pulmonary function, and (b) diffuse pleural thickening with considerable disorder of pulmonary function <sup>b</sup>	
Medical expenses	Full amount covered	Patient responsible <sup>b</sup>	None <sup>a</sup>
Outpatient expenses	In principle, actual expenses covered in full	None <sup>a</sup>	None <sup>a</sup>
Compensation for lost work	Approx. 330,000 yen per month (80% of average monthly wage)	Uniform 103,870 yen per month as allowance for medical treatment <sup>b</sup>	None <sup>a</sup>
Funeral service fee	Approx. 820,000 yen (average wage for 30 days plus 315,000 yen, or average wage for 60 days)	Uniform 199,000 yen (time limit: 2 years, same as under workers accident compensation insurance) <sup>b</sup>	Uniform 199,000 yen <sup>b</sup>



Lump payment to family	Uniform 3 million yen (plus lump payment of 13.7 million yen [average wage for 1000 days] to families ineligible for pension benefits)	If a patient with a medical condition prior to enactment of the law dies within 2 years after enactment of law, the sum listed on the left shall be paid as an adjustment if the total in medical expenses and allowances for medical treatment is less than the 2.8 million yen sum listed on the right <sup>a,b</sup>	Uniform 2.8 million yen as special survivor condolence money <sup>b</sup>
Survivor pension	Approx. 2.75 million yen (average wage for 153 days for surviving family consisting of one dependents, 201 days for two dependents, 223 days for three dependents, 245 days for four dependents or more). If period for relief money has expired, many beneficiaries receive a small accident compensation pension benefit of less than 2.4 million yen <sup>b</sup>	None <sup>a</sup>	None <sup>a</sup>
Education assistance	12 000 yen monthly for day-care center for children or elementary school student, up to 38 000 yen monthly for university student	None <sup>a</sup>	None <sup>a</sup>

*Source:* Ban Asbestos Network Japan (BANJAN)

*Note:* Despite eligibility for approval under the criteria of the New Act, there have not been any cases of relief money being provided to patients who in the past were not approved under the criteria of the Workers Accident Compensation Insurance framework

<sup>a</sup> “Cracks” in relief money

<sup>b</sup> Lack of “fairness”

troublesome, and this probably explains the limited number of applications actually submitted or approved. Although flaws in the administrative approval process had been cited earlier during the handling of applicants with Minamata disease, one must wonder whether similar flaws are impeding the handling of asbestos-related applications. To identify applicants with Minamata disease, the screening committee relied on the symptoms seen in severe cases, and took Hunter–Russell syndrome as one of their approval criteria. This approach impeded a full understanding of Minamata disease and had the effect of excluding certain classes of patients from assistance. Similarly, it would appear that applying the severe symptoms of mesothelioma as the core criteria for approval of patients with asbestos-related diseases would excessively restrict eligibility for relief money. Furthermore, is not the scope of damage compensation limited by the composition of the screening committee itself, which is a body consisting solely of physicians with no legal professionals? Does not the decision to exclude residents with pulmonary asbestosis point to an over-reliance on the limited perspectives of the professional medical community (Table 2.4)?

### ***2.1.2 Epidemiological Studies (and Projections)***

Epidemiological studies of asbestos-related industrial accidents face numerous difficulties because they must look back in time to the initial point of exposure. For workers accident compensation purposes, corporations still in business could examine their payroll records to create registers of employees who were engaged in their operations during the period of time they utilized asbestos, and could recommend that those individuals receive medical examinations. The 2514 businesses cited earlier should be keeping records of the names of their employees and the duties in which each employee is or was actually engaged. In cases of industrial pollution, it will presumably also be necessary to register the names of residents living in the neighborhoods surrounding plant facilities that were engaged in the manufacture of asbestos products. In FY 2006, assessments of the health risks associated with asbestos were performed by Osaka Prefectural Government, Saga Prefectural Government, and the City of Amagasaki. In that study, surviving family members of patients listed as having died of mesothelioma in selected demographic mortality tables over the 3-year period from 2003 through 2005 were interviewed about each patient's occupational record and history of residence in Osaka Prefecture (Osaka City, Takatsuki City, and Higashiosaka City) and Saga Prefecture. In addition, the study also confirmed the residential addresses listed in each patient's record of registered domicile through the period from 1955 to 1974. Medical records of these patients kept by health-care institutions were then updated with their respective occupational histories. Industrial facilities that handled asbestos products from 1955 to 1974 – the period of heaviest asbestos use in Japan – were also identified. While no professional medical appraisal of this study can be offered, it does raise several noteworthy points about Osaka Prefecture that should be taken into account. These points are discussed below.

Of the 263 deceased patients considered by the study, interviews were held with the consenting family members of 130. Of that number, it was learned that 32 (24.6%) had been approved for workers accident compensation; a relatively high percentage. In addition, 108, or 83%, of the total were subject to at least one path of exposure associated with their workplace, whether it involved an industrial accident, their occupational field, exposure within their home, or entry into facilities that handled asbestos. The pathway of exposure for 22 others could not be identified. Of 338 industrial facilities known to have handled asbestos, 109 are concentrated in the City of Osaka, 47 in the City of Sennan, and 46 in the City of Hannan. Although they tend to be spread throughout the Cities of Osaka, Sennan and Hannan, they are mostly concentrated in the lowland or flatland areas. The epidemiological study concluded that it was not possible to uniformly identify the types or amounts of asbestos these facilities handled, the periods during which they used asbestos, the asbestos form-factors or package formats they handled or processed, or whether they released asbestos into the general environment during the two decades from 1955 to 1974. The study chiefly plotted the physical locations of the asbestos-handling facilities and the residential addresses of the targeted patients, and investigated the correlations between the two. It focused in particular on the correlations with patients who were thought to have been exposed to, and contaminated by, asbestos that had been released into the general environment, but concluded that no correlations could be drawn for those who resided in the Amagasaki area (as will be considered in more detail later), and that further study of that topic was warranted. In addition, albeit perhaps because it was limited to a focus on mesothelioma, the study also concluded that no correlations could be found in the Sennan and Hannan districts between asbestos-handling facilities and local deaths from mesothelioma attributable to asbestos exposure through general environmental pathways (Osaka Prefecture, Osaka City, Sakai City, Takatsuki City, and Higashiosaka City 2007).

The risk assessment conducted by the Osaka Prefectural Government in the Sennan district was aimed at individuals aged 40 and over who had lived in the area prior to 1990 and were considered to be at risk of being exposed to asbestos through general environmental pathways. A total of 309 participants in the assessment underwent diagnostic interviews and examinations. Of 168 subjects (54.4%) who had medical indications, 30 (9.7%) were found to be ill. Of these 168 subjects, 142 (84.5%) were also found to have occupational or family occupational histories related in some way to asbestos, whereas 26 (15.5%) did not have a directly identifiable history of asbestos exposure. Of the 168 who had medical indications, 130 (77.4%) had pleural plaque; of the 30 determined to have a disease condition, 5 (16.7%) had pulmonary asbestosis, 3 (10.0%) had lung cancer, and one subject in this latter group had both pulmonary asbestosis and lung cancer. Of the 26 subjects who did not have a directly identifiable link to asbestos exposure, 16 (61.5%) had pleural plaque, 7 (26.9%) had enlarged lymph nodes, and one had lung cancer. A follow-up of the lung-cancer patient has been scheduled in order to determine whether his illness is due to asbestos exposure. The risk assessment report does not offer any conclusions regarding links with the industrial facilities that have handled asbestos. Nonetheless, the risk that local residents have been exposed to, and

contaminated by, asbestos pollution cannot be denied given that the assessment did identify typical disease symptoms even in subjects who had no directly identifiable links to asbestos exposure (Osaka Prefectural Government 2007).

The Ministry of the Environment (MOE) and the City of Amagasaki have issued an interim report on the findings of a joint epidemiological analysis and survey of asbestos exposure. In that study, approximately 180 000 Amagasaki citizens with a history of local residence between 1955 and 1974, and a continuous record of domicile up to the end of 2001, were selected and divided into several observation groups. Of 50 Amagasaki citizens who had died of mesothelioma between 2002 and 2004, 42 who had a record of domicile in the specified time-frame were selected for study. Of this group, 16 were determined to have been exposed to asbestos through an industrial accident or their occupation, and 5 through exposure in their home; the exposure pathway for another 10 subjects could not be identified, and the remaining 11 were not actually studied. Based on the findings of this study, the standardized mortality ratio (SMR) was high for Amagasaki residents up to 1965, and highest of all for those who became Amagasaki citizens between 1955 and 1959. Although many subjects in the sample did not readily fit into any of the administrative classifications, the SMR for men ranged from 10.6 to 21.1, and was the highest (21.1) for those who resided in the Oda district (Amagasaki) until December 31, 1969. The SMR for women living in the same Oda district was also at its highest (68.6) in the same time-frame, compared with a range of 29.6–68.6 for all time-frames. The Oda district is the neighborhood surrounding the Kubota facility (The Ministry of the Environment and Amagasaki City 2007).

Given the relatively small scale of the subject sample in this risk assessment and the lack of data on past sources of exposure, further study will be needed. Nevertheless, even with the limited data, the findings of this study still support the previously cited conclusions of Kurumatani and Kumagai. Despite the inadequacies of risk studies of this kind, it seems undeniable that the Sennan district in Osaka Prefecture and the Oda district in the City of Amagasaki have been hit by an asbestos disaster.

### ***2.1.3 Regulations and Follow-Up Countermeasures for Asbestos Businesses and Related Facilities***

Immediately following the Kubota Shock, the Ministry of Health, Labour, and Welfare disclosed details of its administrative guidance for asbestos-related business establishments. However, out of 124 establishments that received guidance, as many as 57 (46%) were cited for violations of regulations designed to prevent asbestos-related diseases. In particular, 30 (62.5%) out of 48 business establishments involved in processing goods that contained asbestos were cited for such violations. The highest violation rate was for a failure to implement asbestos-related health examinations (24.2%), followed by violations of rules on the installation and use of protective respirator equipment (21.0%), and failure to perform required

measurements and prepare records thereof (20.2%). In addition, over 10% of the establishments were cited for failure to install washroom or disposal facilities or implement restricted-area practices. These violations point to a strong likelihood of future asbestos-related industrial accidents. The current level of noncompliance with established laws and regulations illustrates how difficult it may be to enforce future restrictions on structural demolition projects and other operations involving the risk of asbestos exposure.

In on-site inspections of 389 facilities subject to inspection in 15 prefectures, the Ministry of Internal Affairs and Communications (MIC) Administrative Evaluation Bureau found that 36 had degraded asbestos stocks that were at risk of airborne dispersal and creating an exposure hazard. Of those 36, it was determined that 15 had not sealed off locations that used asbestos or taken other steps to prevent asbestos exposure. High facility clean-up costs have been cited as the prime reason for their failure to act. One project to decontaminate a privately operated parking tower in Kagawa Prefecture was canceled owing to the estimated 60 million yen clean-up cost. There have also been reports of facilities resorting to the dangerous practice of routine sweeping of contaminated areas rather than implementing exhaustive clean-up measures. Furthermore, according to the Ministry of Land, Infrastructure, Transport, and Tourism (MLIT), approximately 32 000 out of some 42 000 large-scale facilities in Tokyo with floor-space exceeding 1 000 m<sup>2</sup> have not been inspected. Even inspections of a sample of smaller facilities outside the scope of the regulation detected asbestos exposure at 16.7% of the structures inspected (Asahi Newspaper, December 12, 2007, and Nihon Keizai Shimbun Newspaper, December 12, 2007).

As these findings indicate, not enough has been done thus far to prevent asbestos-related accidents.

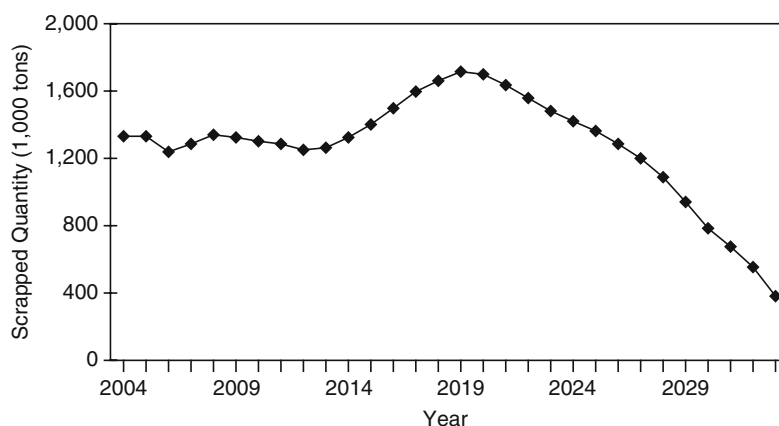
In 2006, the national government announced an all-out ban on the use of asbestos. Until that time, asbestos had been described as a wonder material and treated almost as if the national economy would not survive without it. However, did Japan actually face any turmoil or pandemonium after the ban took effect? The truth is that in practically every industrial sector, economic productivity has not been impeded to any significant extent by the use of substitute materials. This suggests that the benefits of asbestos derive not from its properties as a material, but rather from the fact that it is less expensive than its substitutes. That point is further demonstrated by the fact that dangerous asbestos textile industries, such as the one based in Osaka's Sennan district, have traditionally run their operations using low-wage labor. One question worth asking at this point is how much asbestos remains in industry stockpiles. Investigations of the roughly 3 000 products that contain asbestos have not even been initiated. In December 2003, the Japan Asbestos Association released quantitative data on the construction materials in which asbestos is used most extensively. From 1971 to 2001, the industry produced a cumulative total of over 4 015 million m<sup>3</sup>, or 43.42 million metric tons, of construction materials containing asbestos, with an estimated scrap or disposal rate of 5%, or 2.17 million tons, at the time of use. By the association's estimates, existing structures incorporate over 3 814 million m<sup>3</sup>, or 41.25 million tons, of construction materials containing asbestos, with an estimated 5.41 million tons of asbestos being utilized (Table 2.5).

**Table 2.5** Estimated (projected) quantities of asbestos-containing construction materials in existing structures

Year	Shipped quantities		Scrap rate (%) at time of use	Amount scrapped at time of use (metric tons)	Estimated quantities of asbestos-containing construction materials in existing structures		Estimated quantities of asbestos (metric tons)
	Floor space (1 000 m <sup>2</sup> )	Weight (metric tons)			Floor space (1 000 m <sup>2</sup> )	Weight (metric tons)	
1971	123 678	1 229 826	5	61 491	117 494	1 168 335	190 933
1972	137 528	1 321 029	5	66 051	130 652	1 254 978	208 618
1973	176 208	1 724 671	5	86 234	167 398	1 638 437	270 475
1974	137 293	1 350 705	5	67 535	130 428	1 283 170	212 273
1975	119 399	1 172 095	5	58 605	113 429	1 113 490	185 194
1976	132 239	1 319 281	5	65 964	125 627	1 253 317	208 650
1977	134 801	1 351 686	5	67 584	128 061	1 284 102	212 088
1978	132 574	1 328 947	5	66 447	127 845	1 262 500	208 312
1979	152 962	1 517 406	5	75 870	145 314	1 441 536	236 550
1980	147 552	1 444 330	5	72 216	140 714	1 372 114	214 395
1981	120 729	1 251 092	5	62 555	114 693	1 188 537	167 810
1982	124 206	1 276 821	5	63 841	117 996	1 212 980	172 344
1983	121 990	1 254 728	5	62 736	115 891	1 191 992	163 471
1984	131 060	1 342 755	5	67 138	124 507	1 275 617	173 824
1985	150 255	1 494 169	5	74 708	142 742	1 419 461	185 980
1986	150 982	1 518 656	5	75 933	143 433	1 442 723	173 904
1987	167 524	1 709 219	5	85 461	159 148	1 623 758	187 892
1988	182 727	1 849 651	5	92 483	173 591	1 757 168	209 028
1989	177 081	1 803 727	5	90 186	168 227	1 713 541	209 070
1990	184 212	1 862 501	5	93 125	175 001	1 769 376	207 869
1991	178 699	1 857 209	5	92 860	169 764	1 764 349	195 376
1992	141 376	1 636 397	5	81 820	134 307	1 554 577	173 026
1993	116 571	1 462 937	5	73 147	104 498	1 359 790	153 792
1994	109 998	1 431 246	5	71 562	104 498	1 359 684	151 581
1995	108 629	1 463 480	5	73 174	103 198	1 390 306	141 929
1996	107 316	1 465 438	5	73 272	101 950	1 392 166	142 599
1997	97 802	1 343 287	5	67 164	92 912	1 276 123	131 082
1998	75 272	1 042 259	5	52 113	71 508	990 146	91 821
1999	71 462	1 005 021	5	50 251	67 889	954 770	87 991
2000	59 971	898 780	5	44 939	56 972	853 841	80 589
2001	41 593	689 931	5	34 497	39 513	655 434	64 279
Total	4 015 689	43 419 282	—	2 170 962	3 814 904	41 248 320	5 412 652

Source: Data from the Japan Asbestos Association

Figure 2.1 illustrates the projected trend in the volume of scrap construction materials containing asbestos if the average service life is estimated at 30 years. Based on that formula, the projected volume will peak at close to an estimated 1.8 million tons per annum in the year 2020. By that time, the estimated cumulative floor space of demolished structures will surpass 170 million m<sup>2</sup>, and the estimated



**Fig. 2.1** Projected trend in the volume of scrapped asbestos-containing construction materials  
*Source:* Japan Asbestos Association

volume of scrap asbestos alone will exceed 200 000 metric tons. One point that must be borne in mind here is the sheer quantity of asbestos in use by this sector: around 10 million tons. Even if other industrial sectors use only 1% or 0.1% of that amount, in quantitative terms that still equates to a substantial 100 000 tons or 10 000 tons, respectively. This is why it will be necessary to establish an accurate record of asbestos use in the 3 000 products containing asbestos cited earlier (Fig. 2.1).

Regarding the different types of scrap asbestos, the government has established strict handling criteria, and mandated that industrial users should assign special industrial waste product managers to supervise the handling of types of particulate asbestos. Nonparticulate scrap asbestos products, such as those in formed board shapes, are considered safe provided they are not pulverized or cut apart. The Ministry of the Environment delineates these separately from other types of scrap product, requires that they be covered with sheeting or placed into bags for storage or transport purposes, and stipulates that as a rule they must not be pulverized or cut apart. Although these materials may be disposed of in safe disposal sites traditionally approved for the disposal of building rubble, if they are disposed of in landfill sites, it is required that this must be done in designated locations, and that the landfill materials must be covered with a surface layer of soil at the end of each working day.

As these examples suggest, strict regulations have been established for the disposal of scrap asbestos products. However, when an enormous volume of waste material has to be disposed of, the question is whether disposal site operators will be prepared to devote the care and attention required for proper disposal in line with regulations, or to provide the oversight framework needed in order to blow the whistle on violators of the previously cited preventive regulations against asbestos contamination. Above all, the question remains whether asbestos-containing scrap materials can be safely disposed of in an age where candidate landfill sites for the disposal of industrial waste in general are becoming increasingly scarce.

Intermediate processing is one way of ensuring the safer disposal of particulate asbestos materials, but not enough facilities for dissolution processing have yet been built. Although interviews with the Ministry of the Environment heard reports that dissolution processing facilities were available in 16 locations, interviews with the Japan Asbestos Association determined that ultra-high-temperature dissolution facilities were available in only six locations operated by the Nippon Steel Corp. and other companies, and that in any event, not many facilities of this kind exist. Processes for chemical dissolution have not yet been perfected for commercial use. Although it would be worthwhile to clearly specify the amount of asbestos in construction materials, procedures for special handling would be complicated. One fear is that homes and other small-scale structures will be bulldozed at the time of demolition, thus aggravating the extent to which asbestos-containing materials are pulverized or crushed.

Interviews with the Japan Asbestos Association reportedly found that the transition to asbestos substitutes is almost complete. As demonstrated by cases of silica litigation currently under way in the US, the safety of material alternatives to asbestos has been brought into question, and will be a matter for future study. In addition, as echoed by revelations that the NICHIA Corporation cheated on inspections by dousing its fire retardant construction materials in water prior to tests, questions about the actual effectiveness of asbestos substitutes still linger.

Although public concern about the asbestos issue clearly subsided after enactment of the New Act, the harm caused by asbestos can be expected to continue to mount over the coming half-century. Counter-measures to deal with the asbestos issue, including reforms and innovations under the New Act, are only now beginning to take shape. Given that backdrop, we now explore world-wide trends and some of the theoretical issues in order to gain a clearer picture of the asbestos crisis.

## **2.2 The Asbestos Crisis and Modern Political and Economic Systems**

### ***2.2.1 International Trends in Asbestos Use and Contamination***

Utilizing statistics on world asbestos production and consumption published by the US Geological Survey, I selected 15 countries for comparison, and explored quantitative trends in asbestos use. Table 2.6 lists the quantities used in 10-year increments, starting in 1920. The latest year for data was 2003. Asbestos use is estimated to have reached an actual cumulative total of around 180 million metric tons from 1920 to the present day, the period for which statistical records are available. As far as rough estimates permit, correlations can be drawn between the quantity of asbestos used and the scale of GDP in the advanced industrial countries up to the time that asbestos use was limited or banned. Further, the quantities used peaked during



periods of accelerated economic growth. As these trends in consumption show, the quantities of asbestos used declined first in Sweden, then in the UK, and then in the US after early restrictions on asbestos use came into effect in the 1980s. Comparable declines began to appear in Germany, France, and Italy in the 1990s, with Japan effectively the last industrial power to follow suit in the first decade of the twenty-first century. Conversely, in the developing countries, the quantities of asbestos used actually began climbing sharply in the 1990s and thereafter, particularly in the Asian countries of China (to 500 000 tons/year in the 2000s), India (300 000 tons/year in the same period), and Thailand (100 000 tons/year in the same period), and in the South American country of Brazil (200 000 tons/year in the same period). Among countries transitioning from socialist to capitalist market economies, Russia exhibited an unusual increase in asbestos use from 1.47 million tons in 1980 to 2.15 million tons in 1990. Even now, it is still a heavy consumer, using over 400 000 tons/year. These countries have not yet implemented any asbestos counter-measures; that will be a future challenge. As these trends illustrate, asbestos was a material which was essential in the drive for rapid industrialization and urbanization. Banning the use of asbestos is possible once the pace of industrialization and urbanization has begun to slow, but to date very few countries have banned its use during an accelerated growth phase aimed at building an economic structure based on energy-intensive consumption (Table 2.6).

In keeping with the definition of complex stock pollution, citizens face the risk of exposure and harm at all stages of the asbestos product cycle, from manufacture and distribution to consumption and disposal (for more details, see Miyamoto 2006, 2007).

In other words, the future victims of asbestos contamination can be expected to be found in many workplaces and households, both nation-wide and world-wide. Moreover, their symptoms will begin to manifest themselves anywhere from 10 to 50 years after being exposed. Given this scenario, it is possible that the business establishments that were responsible for their exposure to asbestos will no longer be readily known. It is believed that exposure to asbestos is the underlying cause in 80–90% of all cases of mesothelioma. However, the effects of tobacco use, dietary habits, and environmental conditions should also be factored in as possible causes of lung cancer and other cancers of the internal organs. For this reason, government agencies tend to be reluctant to declare asbestos contamination a clear-cut cause. Owing to a mixture of influences, including the uncertainties of, and potentiality for, multiple causal agents and sources of responsibility, flaws in medical diagnostic procedures, and the slow pace of progress in the field of epidemiological science, the true extent of the harm from the massive, long-term use of asbestos world-wide is not yet known.

In the United States, approximately 10 000 citizens currently die each year from illnesses attributed to asbestos exposure. This annual total is expected to reach its peak in the year 2015. Various corporations have already been ordered by the courts to pay around \$65 billion (nearly 7 trillion yen) in damages. In France, yearly deaths from asbestos-related causes average about 3 000, and the cumulative loss of human lives is expected to reach up to 100 000. In 2000, the French government established

**Table 2.6** Asbestos consumption by country (units: metric tons)

Country/year	1920	1930	1940	1950	1960	1970	1980	1990	2000	2003
China	–	315	140	102	81 288	172 737	241 000	185 748	382 315	491 954
India	1 847	34	5 554	11 160	23 652	49 792	96 892	118 964	145 030	192 033
Japan	4 965	11 193	26 673	12 245	92 483	319 473	398 877	292 701	85 440	23 437
South Korea	–	–	5 589	610	631	36 664	46 641	76 083	30 124	23 799
Thailand	–	–	–	–	6 433	21 272	58 756	116 652	109 600	132 983
Canada	–19 824	41 433	15 162	41 157	45 327	95 374	106 369	76 014	–4965	19 781
USA	151 766	192 454	237 071	660 129	643 462	668 129	358 708	32 456	1 134	4 634
Sweden	336	1 061	2 878	10 002	17 079	18 646	1 181	595	–12	–
UK	21 199	23 217	95 008	107 606	163 019	149 895	93 526	15 731	268	22
France	445	–	19 130	38 921	83 385	152 357	125 549	63 571	–26	–5
Germany	6 647	13 709	11 181	93 842	167 408	226 703	440 045	15 084	212	102
Italy	3 838	6 942	13 471	24 813	73 322	132 358	180 529	62 407	40	–
Australia	839	83	14 821	18 182	43 834	68 902	66 485	1 706	1 424	19
Russia (USSR)	1 629	38 332	71 127	136 458	453 384	680 589	1 470 000	2 151 800	449 239	429 020
Brazil	205	136	559	9 279	26 906	37 710	195 202	163 238	172 560	78 403
World total	183 868	388 541	522 282	1 266 929	2 178 681	3 543 889	4 728 619	39 963 873	39 638 73	2 108 943

Source: US Geological Survey, *Worldwide Asbestos Supply and Consumption Trends from 1990–2003*, Supplement Policy Science Special Issue on Asbestos Problems, 2008

a special indemnification fund for asbestos victims (*FIVA, Fonds d'Indemnisation des Victimes de l'Amiante*), and began managing the fund in 2002. It is estimated that funding in the range of 26.8–37.2 billion euros (roughly 4.5–6.2 trillion yen) will be needed over the coming 20-year span. Between 2002 and 2006 in the UK, under the compensation framework for industrial accidents, approximately 12 000 citizens were recognized as patients with legally defined occupational illnesses stemming from asbestos exposure. Of that total, 6 420 were mesothelioma patients.<sup>1</sup>

Japan has utilized an estimated 10 million metric tons of asbestos to date. Takehiko Murayama projects cumulative deaths from mesothelioma at around 100 000 over the coming 40 years. Extrapolating from that estimate, mesothelioma deaths world-wide may reach as many as 1.8 million, considering that the global use of asbestos has totaled approximately 180 million tons to date. Under the Helsinki Criteria, nearly twice as many deaths are believed to stem from asbestos-induced lung cancer. That is equivalent to roughly 3.6 million lives world-wide. Together, these estimated totals may surpass five million lives. If we also take into consideration the many patients who have suffered and died from pulmonary asbestosis, it would seem no exaggeration to describe the harm from asbestos as a catastrophe on an unprecedented scale. Moreover, large quantities of asbestos are still being utilized by the developing world. Even if the future brings advances in preventive methods and medical treatment, asbestos-induced illnesses are likely to rank alongside automobiles as one of the top causes of social loss attributable to normal economic activity throughout the rest of this century. What is known now is only the tip of the iceberg. Further efforts must be made through epidemiological research and the identification of asbestos victims in order to gain clear insights into the full scale of the asbestos catastrophe. How could this catastrophe have been allowed to occur in the first place, and then be so largely neglected?

### ***2.2.2 The Asbestos Crisis as a Product of Flaws in Modern Socioeconomic Systems***

Reflecting its popularized image as a miracle or wonder material, asbestos does excel in various properties, including heat and fire resistance, suitability to a variety of applications, and physical stability. Furthermore, it has been in wide use for many years. However, the heavy levels of asbestos use commonly observed now did not appear until after the Industrial Revolution was underway. As Table 2.6, trends in asbestos consumption, illustrates, it was the American way of life, with its mass consumption and urbanization, that set the trend toward heavy asbestos use into motion. Suffice it to say that the arms race (and the mechanization of warfare with the development and manufacture of battleships, fighter aircraft, tanks, and other vehicular military machinery) further fanned the flames behind this trend. This was highlighted by a sharp jump in asbestos use within the US to almost 200 000 tons a year starting around 1930, a trend which was sparked in the 1920s and thereafter by the invention of the Model-T automobile, and fueled by the heavy consumption

of energy to supply the mass market with automobiles, electrical machinery, and other durable consumer goods, the trend toward urbanization, the widespread construction of dwellings as another class of consumer durable, and the steady build-up of new steel and steel-reinforced concrete high-rise structures alongside conventional stone architecture buildings. Many other countries have also demonstrated a sharp increase in consumption in parallel with modernization efforts influenced by the US economic model. Following the shift into its own phase of rapid economic growth in the 1960s, Japan also experienced a steep surge in asbestos use coinciding with its efforts to urbanize and adopt American-style mass consumerism, particularly with the manufacture of automobiles, the construction of concrete high-rise buildings, the development and spread of a modern water supply and sewerage infrastructure, a supporting base in a heavy chemical industry and large power-generating facilities, and other elements of energy infrastructure.

From a different perspective, energy-intensive manufacturing facilities and consumer goods require asbestos for its properties as a heat-resistant material. Urbanization has been accompanied by the concentrated build-up of factories and other business establishments together with residential zones, which in turn raise the risk of fire hazards. These trends presumably encouraged the increased use of asbestos to take advantage of its qualities as an effective fire-resistant, sound-proofing material. From that perspective, one may conclude that modern economic systems driven by energy-intensive forms of mass production and consumption, and spatial urbanization strategies that strive to harness the benefits of infrastructure build-up, provided the key source of demand for intensive asbestos use. Suffice it to say that demand for asbestos climbed when such systems were being built. Once the structure is in place, however, it should be possible to make the transition to asbestos alternatives.

Although many developing countries are aware of the severity of the asbestos crisis in the advanced industrial world, they have continued to use asbestos in massive quantities. One reason is that they are still in the process of building modernized economic systems of their own. Another is that they are also in the midst of military build-ups, and are using asbestos because of its exceptional material qualities and low cost.

Efforts to control asbestos hazards have not been successful even within modern economic systems that use asbestos in massive quantities. This reality highlights a failure of government administrative and political systems, which should be giving top priority to the protection of human life, health, and fundamental human rights. Had most national governments heeded the alarms sounded by the International Labour Organization (ILO) and implemented asbestos investigations and controls on that basis, the damage from asbestos might not have become as extensive as it now is. The problem, as has been seen with other cases of industrial pollution and disasters, is that preventive measures and curbs against the social losses posed by modern economic systems give priority to economic growth, and are built on a structure of collusion between bureaucrats, politicians, and big business rather than a public-private relationship of checks and balances. Additional blame may be ascribed to the weakness of social movements, led in particular by labor movements,

that are unable to remedy these governmental flaws, and to the weakness of news organizations that lack freedom of speech or a firm sense of justice. In developing countries characterized by collusion between bureaucrats, politicians, and big business, these issues have delayed the preparation of effective legal curbs and regulations, and even the academic community has not been able to effectively shed light on the harm caused by asbestos or sound an alarm. Further, owing to the lack of freedom of speech or association, labor movements and citizen-led drives advocating the introduction of asbestos curbs and regulations have not materialized because of the difficulty of alerting the public to the dangers of asbestos or reporting on asbestos-related accidents and illnesses.

Perspectives of this kind facilitate a better understanding of the relationship between asbestos-related accidents and the fundamental nature of modern political and economic systems. Examining the historical background of this relationship is of significant value to an analytical understanding of socialist and capitalist systems, as well as modern civilization. At the same time, it seems imperative that we do not neglect the task of weighing the benefits and risks of asbestos alternatives as long as these systems remain in place.

## **2.3 Responsibility for, and Relief from, Complex Stock Pollution**

### ***2.3.1 Judicial Relief and Administrative Relief: Experiences at the Country Level***

Most advanced industrial nations have created public indemnification frameworks to provide relief for the victims of workplace asbestos exposure and contamination. This is a form of no-fault insurance, and as such, in most cases it is limited solely to the provision of economic or financial compensation. However, asbestos pollution is different from flow pollution in that not all victims may be guaranteed relief. The reasons are as follows: (1) certain causal relationships may be unknown; (2) certain victims may not be aware that they have been affected; (3) only certain victims may apply for relief; (4) the companies liable for the pollution may no longer exist. Furthermore, no relief frameworks have been set up to handle cases of asbestos exposure affecting the family members of workers in asbestos-related industries, or of asbestos pollution affecting local residents. Recourse in those cases would involve seeking relief through the courts or having public indemnification frameworks revised and updated. That is basically where the situation currently stands in relation to measures for relief in most industrial countries. Capitalist market societies abide by the principle that businesses operating on the basis of free competition are responsible for their actions. Hence, a victim that stands to benefit through litigation will, as plaintiff, typically take the liable company to court, have the defendant's liability established, and seek damage compensation accordingly. However, given

the aforementioned nature of asbestos exposure and contamination, there is a limit to the effectiveness of the courts. For that reason, more countries have begun to establish new indemnification laws which differ from the laws or frameworks they may already have in place for the provision of compensation to victims of workplace accidents. Seeking resolution through the courts is the mainstream approach in free societies such as the US, whereas in countries such as those in Europe with tradition-based social policies, public indemnification frameworks have been set up. This section briefly examines some of the problems facing both approaches.

### **2.3.1.1 Asbestos Litigation in the US**

In the US, each state has its own workers accident compensation framework. These frameworks differ state by state, but do not always function effectively in terms of gaining relief for victims. In New Jersey, a Polish national employed as an office worker for Johns Manville Corp. received relief money through that state's framework, and then filed a lawsuit through which he received \$30 000 in damages. In later testimony, the worker disclosed that from the \$30 000 court award, he repaid \$10 000 back to the state of New Jersey in compensation, used another \$10 000 to pay his attorneys' fees, and kept only \$10 000 of the award for himself. Asbestos court cases can be complicated exercises in litigation that involve multiple defendants. What is more, plaintiffs face difficulties in establishing a causal burden of proof owing to the long periods of dormancy that usually intervene between the initial exposure and the initial presentation of medical symptoms. However, in the US, litigation is deemed a desirable means of obtaining relief money for victims of asbestos exposure (DiMuzio 2007).

The attorney Robert Horkovich has earned \$2 billion from compensation claims in his work as one of the most prolific attorneys involved with asbestos issues and litigation having to do with the Super Fund Law. Drawing from his own experience, Horkovich notes that litigation does not always furnish victims with an acceptable resolution. As mentioned in other work by this author, a huge number of asbestos cases have gone to court; as of the year 2000, 59 000 cases had been filed, involving a total of 8 400 defendant companies and some 600 000 plaintiffs. Horkovich has predicted that the existence of multiple defendants could lead to as many as 300 000 cases of litigation. To date, insurance companies have already paid out approximately \$65 billion in damage compensation claims, a sum that exceeds the combined value of losses from the 9/11 terrorist attacks and Hurricane Andrew. Of the total in damage compensation, insurers (half of them based abroad) paid 61%, while defendant companies paid the remaining 39%. About 42% of the total asbestos court awards is paid out as compensation to plaintiffs, 31% is paid as insurance company compensation and legal fees for defense attorneys, and 27% is paid as legal fees for plaintiff attorneys. Although the insurance industry did away with asbestos-related insurance products in 1985, in many court cases, awards for damages were for medical conditions that existed prior to 1985. As this illustrates, plaintiffs, on average, receive no more than 30–40% of the award granted in a

successful court case. Nonetheless, due to the high cost of health care coupled with the absence of a public health insurance system in their country, many victims in the US hold out strong hopes regarding litigation.

Over 70 companies, including the aforementioned Johns Manville Corp., have already been bankrupted by court litigation (Carroll et al. 2007). The Federal Government thus decided to revise its bankruptcy laws for corporate protection, make failed firms establish a joint trust, and allow damage compensation issues to be handled through that trust, thus sparing parent companies from litigation and allowing them to stay in business. Using that approach, Johns Manville Corp. entrusted its damage compensation burden to the established trust, and is now thriving and doing better business than before. The trust receives contributions from companies subject to litigation proceedings. However, the amount of funding paid into the trust thus far seems trivial compared with the amount of damage compensation paid out by parent firms before their filings for bankruptcy.<sup>2</sup>

Asbestos litigation has not been limited to trials seeking compensation for workplace accidents or environmental pollution. According to Gary M. DiMuzio, some cases involve the application of product liability and building liability laws. When filing suit under the product liability laws, a plaintiff only needs to demonstrate that damage was incurred as a result of product flaws. Defendants are held strictly liable for product flaws in design, manufacture, and even marketing, as in the case of defective or missing warning labels. Additionally, under building liability laws, builders are legally liable for accidents or damage incurred by the building's owner or tenants due to building flaws.

Accordingly, litigation proceedings can be fairly complicated and involve multiple defendants owing to issues with product or building liability. For this reason, while in some cases defendants may not have acted illegally on their own, they cannot escape liability just because their actions were compounded by the illegal actions of other defendants, causing injury or damage, and it cannot be demonstrated that those actions were committed by the other defendants alone. Because plaintiff assertions of strict product liability or joint liability are also often applied, defendants are more likely to lose their case. According to DiMuzio, defense attorneys in such cases often actively plead for strengthened conditions on the plaintiffs' burden of proof, or for limiting the scope of product liability to products manufactured only within the past 10–15 years (DiMuzio 2007).

In view of the formidable litigation climate that many companies face, the US Senate has proposed legislation calling for asbestos relief. This would establish a \$140 billion fund comprising reserves of \$90 billion for defendant companies, \$46 billion for insurers, and \$4 billion for a pre-established indemnification fund. One goal would be to offer administrative sources of relief in lieu of litigation through the courts. The Senate also enacted legislation imposing a ban on asbestos sales, to take effect in 2 years. That law is relatively loose by Japanese standards, as it will initially apply only to products with an asbestos content of at least 1%. Asbestos victims and environmental groups (e.g., the Environmental Working Group) supporting them have expressed opposition to these new administrative regulations and relief frameworks.



### 2.3.1.2 The Public Relief Framework in France

As mentioned earlier, France established special funds for compensation for asbestos victims (FIVA) in December 2000. This is a social insurance framework designed to provide relief compensation to people recognized to be suffering from asbestos-induced occupational diseases, as well as people who have been directly exposed to asbestos. FIVA is funded by the national budget and the industrial accident and occupational disease division of the social insurance program. Of the 1 238 billion euro in funding provided to date (2001–2005), 130 million euro (10.5%) came out of the national budget and 1.108 billion euro (89.5%) was provided through the social insurance program. Eligibility for relief compensation from FIVA extends to citizens with a range of conditions, including mesothelioma, lung cancer, pulmonary asbestosis, pleural plaque, and bilateral diffuse pleural thickening. As noted earlier, it is estimated that the fund will need from 26.8 to 37.2 billion euro to cover compensation payments made over the next 20 years.

In 2000, France also established the Asbestos Workers Early Retirement Fund (FCAATA), which mandates retirement for victims and previously exposed workers. It comprises a fund that pays out lifelong benefits to allow asbestos-exposed workers to retire early. In their final 12 months of employment, workers receive an average 65% of their salary in the form of FCAATA benefits. Forty thousand workers used this program in 2004.

FIVA shares the same objectives as the asbestos relief act in Japan. However, together with the FCAATA program, it functions more like a social insurance framework. Like the workers accident compensation insurance framework in Japan, FIVA covers a broad scope of disease conditions. France differs from Japan in that the French government already concedes that there have been policy failures in dealing with the asbestos problem. Furthermore, French relief compensation payments are comparatively large in scale.

Although the French framework excels over its Japanese counterpart in these areas, the current framework drew the following criticisms from Prof. Annie Thebaud-Mony, a researcher representing the Institut National de la Sante et de la Recherche Medicale (Thebaud-Mony 2007).

1. The polluter-pays principle has not been applied.
2. The key persons responsible for this vast health tragedy have eluded civil and criminal liability.
3. Compensation payments to patients have been inequitable.
4. No consideration has been given to prevention.
5. The authorities are resistant to the ideal of seeking criminal justice.

Because of these shortcomings, the number of lawsuits dealing with asbestos exposure rose from around 300 in 2002 to around 500 in 2004, and in most of those cases, employers were reportedly found to be guilty of negligence.



### 2.3.2 *Issues for Future Study*

Although the Ritsumeikan Asbestos Research Project at Ritsumeikan University is pursuing investigative research inside and outside Japan and holds interviews with other researchers on asbestos exposure, its activities have only just begun. Furthermore, countermeasures against asbestos exposure are in their infancy and many issues remain to be addressed.

First, above all, it is imperative that we develop a complete picture of the extent of past exposure, and establish an outlook for future trends in exposure. To that end, we must launch additional epidemiological surveys and strive to identify all individuals suffering from asbestos exposure. Currently, national as well as local government agencies in Japan have been noncommittal about exposure studies, citing the fiscal budget squeeze as their reason. As noted earlier, it is urgent that current and former workers at asbestos-related businesses be identified and registered and provided with access to medical examinations on a continuing basis. This also applies to current and former workers in the structural, demolition, and scrap industries.

For preventive purposes, we need to know where asbestos has accumulated in the environment. This means that information on nearly 3 000 different products must be publicly disclosed. In particular, disclosures on buildings that contain asbestos are needed, along with clear labeling on asbestos-containing construction materials, as these will be the largest sources of asbestos exposure in the years ahead. Large-scale demolition and scrapping projects are planned to get under way soon, but we also need to require that contractors must submit advance notice about smaller projects of less than 1 000 m<sup>2</sup> in scale, ensure that workers are able to perform their operations with maximum safety, and prevent asbestos fibers from impacting the surrounding environment. Although it is highly likely that many public agencies will declare themselves unable to expand their teams of supervisory personnel due to the current fiscal budget crunch, one conceivable alternative would be for local communities and nongovernmental agencies to explore the idea of setting up their own frameworks for monitoring and whistle-blowing.

In view of the findings of surveys and research conducted to date, Japan must establish a public social insurance-type framework for relief compensation which resembles the Western examples described previously. To offset current deficiencies, Japan must also move forward with litigation seeking civil damages from asbestos polluters. As long as holes in the legal structure remain, victims will have no choice but to launch administrative lawsuits (class-action lawsuits).

Revising the provisions of the New Act will be one task that must be completed in the near future. As already demanded by Diet resolutions and victims' groups, the scope of relief money must be identical to that given for work-place accidents, and the amounts of compensation must be raised to levels which are comparable to those paid to victims of work-place accidents. If these steps are to be implemented, presumably the fund for relief money must also be drastically expanded.

An unknown number of questions remain to be addressed, including whether Kubota and other companies will continue to pay the same levels of relief money to the victims of their pollution and the families of employees exposed to asbestos, whether patients and families compensated through the workers accident compensation insurance framework will demand increased benefits, and how diagnostic procedures and treatment methods can be improved. Currently, however, the scale of relief funding itself remains far too small. Although the Kubota Corporation and the NICHIAI Corporation share the burden of making special contributions to the relief fund, the reality is that there are also many victims from shipbuilding, automotive, electrical components, construction, and other fields. It therefore follows that the burden of funding contributions must be extended to these other business sectors. Identifying causal factors and current trends behind asbestos exposure will demand additional survey work and research, as well as revisions to the structure of the relief fund itself.

Should more cases of asbestos exposure and illness arise in the future among workers in the demolition and repair industries, we will face a hurdle in providing relief to workers in those fields who are not covered by the workers accident compensation insurance framework. In reality, workers for many small businesses are apparently outside the scope of coverage. Even under the provisions of the New Act, relief payments to victims of pollution amount to little more than consolation payments, and certainly do not deserve the label of compensation. Considering these circumstances, it seems amazing that so few cases of litigation have been filed in Japan thus far. Also, as demonstrated by litigation over asbestos pollution in the Sennan district, plaintiffs have sued the national government because many of the actual polluters were small companies that have already gone out of business. Given the deficiencies observed in the relevant regulatory structure to date, it seems only natural that plaintiffs would choose to sue the government. However, should not plaintiffs also be filing lawsuits against those textile companies and wholesale trading houses that have produced or handled merchandise utilizing asbestos fiber? In my view, holding multiple companies liable, as is common practice in the US, can be effective in determining who the polluters are. Further, unless there is progress in the courts, efforts to amend and improve the New Act will not make any headway either.

As an advocate of asbestos countermeasures in the US, the Environmental Working Group (EWG) has recommended the following solutions to the current state of affairs in that country (Environmental Working Group 2005).

1. Establish a legitimate relief framework for all victims of asbestos exposure. That task must neither be delayed nor allowed to become too complex. The reason is because asbestos is still in use. The framework for relief money must be in place for at least 50 years, if not longer.
2. To ensure that every individual harmed by asbestos exposure receives relief and aid, a large-scale asbestos health screening campaign must be implemented. The goal will be to screen all persons who have a history of working in an

asbestos-affected environment so that the several million individuals harmed by asbestos exposure can be accurately identified.

3. Restrictions must be placed on the practice of making people forfeit their rights to legal representation. The government trust fund may be only part of the right solution to the asbestos problem. However, participation in the fund must be voluntary. The reason is that we already have a fund to help the families of those lost or injured by asbestos exposure from the collapse of the World Trade Center buildings.
4. Asbestos must be banned. There is no reason to engage in further futile debate over the needless suffering and deaths caused by the use of asbestos. Asbestos substitutes exist. It is time to ban asbestos now.
5. The government institutions and agencies responsible for public health and the environment must strictly monitor the health-care services (relief) provided to the victims of asbestos-induced illnesses. The reason for this is that according to news reports, certain institutions for asbestos relief have been engaged in flawed and dubious operations.

The proposals and recommendations tendered by the EWG seem to apply to national policy in Japan as well as other countries with citizens who have been exposed to asbestos. Asbestos is a global problem. As a proponent of free trade, in 2001 the World Trade Organization (WTO) decided to recognize bans on the importation of asbestos implemented by WTO member countries for health-related reasons. Some years earlier, in 1997, the Canadian government filed a WTO lawsuit against France, claiming that the French ban on asbestos was a technical trade barrier that violated the principle of free trade. Later, in 1999, the EU voted to implement a full-scale ban on asbestos, and requested that by January 1, 2005, all EU member countries should prepare and implement domestic ordinances banning the use of asbestos for all purposes except only as a material for the separation membranes used in chlorine plant electrolysis tanks. This amounted to a measure in support of France's position. Given these circumstances, the WTO decided to recognize the French ban, thus marking its first approval of a measure restricting trade since implementing rules for the resolution of trade disputes.

Given this international backdrop, it is indeed problematic that many developing countries, and in particular China, India, Thailand, and Brazil as well as the transitional economy of Russia, continue to use asbestos (mainly chrysotile) in vast quantities. In the years ahead, our hope is that we can adequately convey the lessons of Japan's own failures to these countries, and urge them to adopt appropriate policies as quickly as possible.

## Notes

1. These statistics were taken from BANJAN (2007).
2. Robert Horkovich's Lecture (August, 2006, New York City).

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