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THE ADMINISTRATIVE COMPENSATION
SYSTEM FOR POLLUTION-RELATED
HEALTH DAMAGES IN JAPAN:
OVERVIEW AND PRELIMINARY EVALUATION

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Forschungsschwerpunkt

Technik

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Umwelt

THE ADMINISTRATIVE COMPENSATION SYSTEM FOR POLLUTION-RELATED HEALTH DAMAGES IN JAPAN: OVERVIEW AND PRELIMINARY EVALUATION

Summary

Japan is the only country in the world that has an extensive, specially regulated compensation system for diseases considered to have resulted from environmental pollution. For certain types of diseases, the system provides for financial compensation and other benefits prorated according to the severity of the case. Much of this compensation is paid by the firms responsible for pollution in the first place, while an automobile tax is collected to cover some of the costs in cases involving air pollution. Certain costs (for administration and rehabilitation programs, for example) are assumed in whole or in part by public funds. The compensation in its present form was created by the Pollution-Related Health Damage Compensation Law of 1973, which took effect in 1974. In March 1988, through an amendment of the law, the compensation system was fundamentally revised. The paper describes in detail the organisation and functioning of the system as well as its shortcomings as perceived by Japanese experts.

DAS JAPANISCHE SYSTEM DER ENTSCHÄDIGUNG FÜR GESUNDHEITSBEEINTRÄCHTIGUNGEN ALS FOLGE VON UMWELTVERSCHMUTZUNG: ÜBERSICHT UND VORLÄUFIGE EVALUATION

Zusammenfassung

Japan ist weltweit das einzige Land, das ein umfassendes, spezialgesetzlich geregeltes Entschädigungssystem für Gesundheitsbeeinträchtigungen hat, die als Folge einer Umweltverschmutzung gelten. Für bestimmte Gesundheitsbeeinträchtigungen gibt es im Rahmen dieses Systems Entschädigungszahlungen und andere Leistungen, die nach Schwere der Beeinträchtigung gestaffelt sind. Die Kosten, die für einen wesentlichen Anteil dieser Kompensationenzahlungen entstehen, werden auf verschmutzende Betriebe umgelegt; im Falle der Luftverschmutzung wird zur teilweisen Kostendeckung auch die Kraftfahrzeugsteuer herbeigezogen. Bestimmte Kosten (etwa für den Verwaltungsaufwand, für Rehabilitationsprogramme) werden teilweise oder gänzlich aus öffentlichen Mitteln gedeckt. In seiner heute bestehenden Form wurde das Kompensationssystem durch das "Pollution-Related Health Damage Compensation Law" von 1973, das 1974 in Kraft trat, eingeführt. Im März 1988 kam es durch Gesetzesänderung zu einer grundlegenden Revision des Systems. Organisation und Funktionsweise werden ausführlich beschrieben, seine Mängel aus der Sicht japanischer Experten dargestellt.

Japan is the only country in the world that has an extensive, specially regulated compensation system for diseases considered to have resulted from environmental pollution. (1) For certain types of diseases, the system provides for financial compensation and other benefits prorated according to the severity of the case. Much of this compensation is paid by the firms responsible for pollution in the first place, while an automobile weight tax is collected to cover some of the costs in cases involving air pollution. Certain costs (for administration and rehabilitation programs, for example) are assumed in whole or in part by public funds. The compensation system in its present form was created by the Pollution-Related Health Damage Compensation Law of 1973, which took effect in 1974. Details are regulated by an enforcement order of 1974, which was subsequently amended several times by cabinet order, for example, in November 1987 by the Cabinet Order for Partial Amendment of the Enforcement Order of the Pollution-Related Health Damage Compensation Law. In March 1988, an amendment to the law (Law No. 97) led to fundamental revision of the compensation system.

Historic Development

Even before enactment of the Pollution-Related Health Damage Compensation Law, there had been similar, though far less extensive, regulations for the support of pollution victims at the national and local levels. The beginning came in 1958, when the government of the prefecture of Kumamoto established a relief system for the victims of Minamata disease. In 1965 the city of Yokkaichi introduced a compensation system for health damages caused by air pollution, a model eventually taken up by other cities. In 1968 the prefecture of Toyama established a relief system for the victims of cadmium pollution (Itai-Itai disease), and other cities and prefectures later followed suit.

In 1969, a national law mandating support for the victims of pollution disease was enacted, the Law Concerning Special Measures for the Relief of Pollution-Related Victims (Law No. 90 of 1969). The legal basis for this legislation was article 21 (2) of the Basic Law for Environmental Pollution Control of 1967, which stated:

The Government shall take the measures necessary to establish a system that will make possible the efficient implementation of relief measures for damage caused by environmental pollution. (2)

Table 1: Areas and Patients Designated for Relief in Japan (March 1974)

	Disease	Designated Area	Number of Official. Certified Patients
Specific Disease	Minamata Disease	Agano River basin Minimata Bay coastal zone	377 616
	Itai-Itai Disease	Jintsu River downstream area	81
	Chronic arsenic poisoning	Toroku District in Miyazaki Prefecture	5
	Subtotal		1,079
Nonspecific Disease	Chronic bronchitis, bronchial asthma, pulmonary emphysema, asthmatic bronchitis and their complications	Tsurumi coast of Yokohama City	398
		Daishi, Tajima and Central part of Kawasaki City	1,449
		Central part of Fuji City	451
		Southern part of Nagoya City	1,564
		Northern and Central part of Tokai City	617
		Yokkaichi coastal area	1,008
		Nishiyodogawa of Osaka City	3,089
		Southern part of Toyonaka City	197
		Western part of Sakai City	322
		Eastern and Southern part of Amagasaki City	3,290
		Dokkai Bay coastal zone of Kita-kyushu City	617
		Central part of Ohmuta City	105
	Subtotal		13,107
	Total		14,186

Source: Environment Agency, 1974.

The relief system of 1969 involved the designation of areas and diseases for which relief was made available in cases where a high incidence of illness due to serious air or water pollution existed. The local authorities whose jurisdiction covered the designated area were responsible for certifying persons suffering from the designated illness. The persons certified received compensation for medical treatment, and additional payments to meet miscellaneous expenses related to their disease were provided. However, persons whose own income or whose spouse's or guardian's income exceeded a certain limit were not eligible for these additional payments. Half of the expense of these payments was borne by voluntary contributions of private companies; the other half, by the national, prefectural, and municipal government. (3)

Table 1 provides an overview of the areas and patients designated for relief in March 1973 (not including the number of certified persons who have died, however).

As shown in Table 2, most of the certified patients suffering from air pollution were children and elderly persons.

Table 2: Number and Age of Certified Patients in Japan Suffering from Air Pollution (March 1972)

Years of Age	Number	Percentage
0 - 9	3,212	50.4
10 - 19	480	7.5
20 - 39	438	6.9
40 - 59	942	14.8
60 - 69	799	12.5
70 or more	502	7.9

Source: Environment Agency, 1973.

After its establishment in 1969, the relief system was partially expanded and improved. For example, additional areas were designated, the allowances for medical treatment raised, and the certification procedures improved to the victim's advantage.

Because of the very narrow eligibility criteria and the system's very low level of compensation payment, this act has met with increasing criticism from the certified victims and those affected persons excluded from the relief system. Commenting on the matter, the Environment Agency stated that

There is a pressing need for establishment of an administrative system that ensures ... prompt and effective relief using funds obtained by levying a charge on polluters. In some areas a relief fund system based on contributions from companies has either already been instituted or is now under consideration. (4)

All efforts to expand the national relief system have met with dogged opposition, however, especially from the industrial sectors concerned and the ministries allied with them. The situation changed in favor of the victims when the plaintiffs won what became known as the Yokkaichi court trial and when it became clear that their counterparts in the Kumamoto-Minamata disease trial would win as well. In particular because of these court decisions favoring victims of environmental pollution and because of their rising protest against inadequate relief, opposition to revision waned.

On April 17, 1972, the Director General of the Environment Agency commissioned the Central Council on Environmental Pollution Control, an independent advisory body to the government, to outline a new compensation system. The council submitted an interim report in December just eight months later. It was circulated to all concerned groups and public hearings were held. The final report was then submitted to the Environment Agency on April 5, 1973. Upon receiving the report, the Environment Agency immediately drafted a bill that was submitted to the Japanese Diet in June 1973. After some revision in the House of Representatives, the bill was passed and was enacted on September 26, 1973 (5) by the Liberal

Democratic, the Communist, and the Democratic-Socialist parties against the opposition of the Socialist and the Komeito parties. (6)

The national law of compensation is also flanked by relief systems at the prefectural and local levels, as described in the following sections.

The Pollution-Related Health Damage Compensation System

Major Features of the System

The national system provides compensation to victims of environmental pollution the causes of which have been positively identified (as in the case of Minamata disease and Itai-Itai disease and of chronic arsenic poisoning) and to the numerically much larger group of persons whose diseases are attributed to air pollution. The basic regulatory structure is identical for both groups. Certain regions are designated by law or cabinet order as areas within which persons meeting certain criteria regarding their diseases are certified as victims of environmental pollution upon application. These people then receive monetary and other compensation according to the type and severity of their disease. The monetary compensation is usually channeled through offices of the responsible local authorities, where the victims can collect it.

The distinctions between 'nonspecific' and 'specific' cases of diseases are defined as follows (7):

(1) Nonspecific diseases

Nonspecific diseases are illnesses, such as chronic bronchitis, bronchial asthma, pulmonary emphysema, and asthmatic bronchitis, for which there is no specific relationship between the substance or substances causing the ailment and the ailment itself. Especially in cases of air pollution it is almost impossible to prove a cause-and-effect relationship with the methods of natural and medical sciences. Therefore, the cause-and-effect relationship between air pollution and the disease is considered on an epidemiological (statistical) basis when the law is applied. Accordingly,

a cause-and-effect relationship is acknowledged when the person suffering from the disease qualifies on the basis of exposure--meaning that the person had lived, worked, or otherwise been present in the polluted area (designated by cabinet order as a class I area) for the prescribed period of time.

(2) Specific diseases

Specific diseases are those for which a specific relationship between the illness and the substance causing it has been largely proven, as is the case with Minamata disease and Itai-Itai disease. In these cases it is possible to establish a cause-and-effect relationship between environmental pollution in the region designated by cabinet order as a class II area and the ailments of individual persons. The conditions to be met for certification are the same as those in class I areas.

Persons wishing to be certified as pollution victims according to the provisions of the Compensation Law must apply to a special institution called the Pollution-Related Health Damage Certification Council. The final decision is reached by the authorities of the prefectures or municipalities on the basis of a report by the Certification Council under whose jurisdiction the designated areas lie.

According to Article 44 of the Compensation Law, a Pollution-Related Health Damage Certification Council of no more than fifteen persons shall be established in each prefecture and city designated by cabinet order. The members are appointed by the governor of the responsible prefecture, or the mayor of the city, from among persons with knowledge and experience in medicine, law, and other fields having to do with pollution-related health damage (Article 45). Furthermore, the Compensation Law provides for the establishment of a Pollution-Related Health Damage Compensation Association, whose purpose is to collect an emission levy from specified businesses and to administer the fund used for payments to pollution victims. The responsibilities of the association are set forth in Chapter V of the Compensation Law (Articles 68-73). Problems or disputes are handled through the normal administrative channels for lodging complaints and the normal legal process (Articles 106-108), but a special

institution has been established for such cases as well--the Pollution-Related Health Damage Compensation Grievance Board (Articles 111-125). The Grievance Board is under the jurisdiction of the Director-General of the Environment Agency, which is the national institution. The six members of the board are appointed by the Prime Minister with the concurrence of both houses of the Diet.

Available Compensation Benefits

Article 3 of the Compensation Law stipulates seven types of benefits to be paid to certified pollution victims (Article 3):

- (1) Medical care benefits: All medical treatment is paid.
- (2) Disability benefits: Disability compensation is paid to persons fifteen years of age or older according to the severity of the disability.
- (3) Survivor's compensation payments: Benefits are paid for a period of about ten years to the dependents of a certified pollution victims who has died of a designated disease.
- (4) Lump-sum survivors' compensation payments: Benefits are paid to specified individuals in cases where there are no direct dependents to a deceased pollution victim.
- (5) Child-compensation allowance: Benefits are paid to the person raising a child under the age of fifteen years who is suffering from a designated disease. The allowance varies according to the severity of the illness.
- (6) Medical care allowances: Benefits are paid to cover costs of commuting to hospitals, hospitalization, etc.

- (7) Funeral allowances: When a certified victim dies of a designated disease, some of the funeral expenses of those conducting the funeral are paid.

In addition to these seven types of benefits, a different part of the Compensation Law, Article 46, provides for other forms of support such as rehabilitation programs and temporary removal of pollution victims to unpolluted areas. The compensation for property damages and for pain and suffering are not provided for in the Compensation Law, however. As a rule, the scope of the benefits varies according to the severity of the illness, sex, age, and average income of the certified victims as set forth in the Compensation Law, the related enforcement orders, and in part, by the Director-General of the Environment Agency after consultation with the Central Council of Environmental Pollution Control.

The duration of the compensation for a certified victim is determined by cabinet order. After that period, an application for review by the Certification Council can be submitted. In serious cases, certification is permanent.

Cost Apportionment

The costs of implementing the Compensation Law are apportioned in various ways. The costs of paying the aforementioned seven types of compensation benefits are to be borne entirely by those responsible for the pollution causing the diseases. However, the system for apportioning the costs varies. In cases of diseases related to air pollution in class I areas, 80% of the funds are collected as an emissions levy directly from stationary sources emitting a specified amount of flue gas. The remaining 20% is collected indirectly through the automobile weight tax paid by owners of mobile sources of pollution. In the case of specific diseases in class II areas, the money is collected only from those enterprises found responsible for causing the disease.

As regards the administrative costs of health and welfare programs, the polluting firms must pay half the total amount, the other half being covered by public funds allocated by the national government or the prefectural or municipal government of the designated areas. The general costs of administering the compensation system are completely paid by the national and local governments. Finally, the costs of running the Pollution-Related Health Damage Compensation Association are borne by those enterprises responsible for the pollution. The national government provides a certain level of subsidization, however.

Designated Areas and Number of Certified Persons

After the Compensation Law was passed, the government designated the regions to which the law was to apply. At the end of 1987, there were 105,027 certified pollution victims, not counting deceased victims (see Table 3, p. 12).

The Compensation System for Nonspecific Diseases in Detail

In class I areas, people meeting certain criteria of health damage caused by air pollution receive compensation benefits and other forms of relief and support keyed to the particular circumstances of the pollution victim. Because of the complicated regulatory dimensions involved (interacting emissions from a plurality of emission sources), the functioning of the compensation system for nonspecific diseases is of methodological interest particularly to the many countries in which air pollution has come to cause great damage (through acid rain and forest die-back, for example).

Table 3: Designated Areas and Number of Certified Persons Under the Pollution-Related Health Damage Compensation Law (December 1986)

Region	Disease	Designated Area	Number of Certified Persons
Class I ("Nonspecific" diseases)	Chronic bronchitis, bronchial asthma, asthmatic bronchitis, pulmonary emphysema & their complications	Regions including southern coastal region of Chiba City, 19 wards of Tokyo, the whole city of Osaka, etc.	101,778
Class II ("Specific" diseases)	Minamata Disease	Lower Agano River Basin	489
	Itai-Itai Disease	Lower Jintsu River Basin	18
	Minamata Disease	Coastal area of Minamata bay	1,352
	Chronic arsenic poisoning	Sasagadani district of Shimane Prefecture	7
		Toroku district of Miyazaki Prefecture	93
	Subtotal Class II		1,959
Total			103,737

Note: In December 1987, there were 105,027 certified persons.
Source: Japan Environment Agency, 1987.

Designation of Areas

The air pollutant sulfur dioxide (SO₂) was chosen as the basic criterion for the designation of areas (and for the collection of duties and charges). This decision was reached essentially for pragmatic reasons--more was known about this pollutant than any other. Moreover, studies conducted to date have given reason to regard it as a primary cause of certain respiratory ailments. Of course, it is known that other pollutants can also be involved in the ailments. In the pragmatic approach repeatedly stressed in official statements, however, the intent was to heed scientific knowledge while nevertheless giving priority to the creation of a system that could be implemented without difficulty so that the affected

population could receive speedy and fair help. Accordingly, all those areas were designated where the level of SO₂ air pollution was relatively high and where the incidence of respiratory ailments was above the 'natural' average. The 'natural' average differs from the 'national' average in that only unpolluted areas are used as the reference point for the former.

In all, forty-one compensation areas totalling 1,313 km² were eventually designated as class I areas. Metropolitan Tokyo, Osaka, and Nagoya account for most of the polluted area. Almost all the other areas, too, are industrial agglomerations on the coast.

Designation of Persons

In these areas, applicants suffering from certain diseases (such as chronic bronchitis) can be certified as pollution victims and receive compensation. Whether the applicant smokes is not considered, for it is feared that such a distinction could make the certification procedure too cumbersome and controversial.

Applicants who have died before their certification and persons who have died without applying can be posthumously certified as 'pollution victims' under certain circumstances. The survivors can then receive compensation benefits, the array of which has been described above.

Cost Apportionment

Much of the cost of implementing the Compensation Law in cases of non-specific diseases are borne by owners of stationary sources that pollute the air. Although sulfur dioxide was taken as a reference pollutant largely for pragmatic reasons, epidemiological studies have revealed a correlation between SO₂ air pollution and the increase in certain kinds of respiratory ailments.

All industrial plants that emit sulfur dioxide are required to pay a levy if their emission of flue gas exceeds a certain load per hour. Calculated in Nm^3 (under normal pressure, 1 Nm^3 equals 2.85 kg SO_2), the limit was 5,000 Nm^3 /hour or more in the designated areas; 10,000 Nm^3 /hour in all other areas. Basic arguments for these limits were that the administrative effort required to collect levies from small sources would be too great and that firms sited outside the polluted areas would have to pay a levy as well because of long-range pollution. By 1975, approximately 7,400 firms responsible for over 90% of all SO_2 emission in the nation had been classified into one of these two categories.

The stationary plants that are required to pay levies are responsible for covering 80% of the compensation costs, with the remaining 20% being transferred from the revenues generated by the automobile weight tax. This distinction was made when the bill was passed because problems arose in establishing a more precise apportionment of the costs. An equitable solution also required mobile sources of pollution to contribute to the compensation benefits.

When the compensation system was first introduced, the rates of the SO_2 levies to be collected from stationary sources were uniform within the polluted areas. But there was a major difference (1:19) between the rates there and those paid by firms in unpolluted areas. Old and new plants alike are required to pay. The rate per unit of SO_2 emission was initially quite low, with one unit at Nm^3 /converting to 2.85 kg of SO_2 . In fiscal 1974 the rate came to 15.84 Yen in polluted areas. Thereafter, the levies rose dramatically because of the increasing costs of compensation.

In April 1977, the levy system for polluted areas was fundamentally altered. Because of the high concentration of claimants in certain places, the levy rates in the various polluted areas were greatly differentiated to ensure fair distribution of the burden. In 1984, for example, the lowest charge in polluted areas was 1,128.71 Yen; the highest, 3,063.64 Yen. The levy rate for unpolluted areas was 179.16 Yen. Even this gradation was not enough to ensure generally equitable distribution, however. In the Osaka region, for instance, not enough levies were collected to finance the compensation benefits that had to be paid there.

The levies increase in proportion to the amount of SO₂ emitted, a fact showing that the compensation system was intended as at least an indirect economic incentive to reduce the level of SO₂ emissions. The main purpose of this system was to finance the necessary compensation benefits with the revenue collected as levies. The level of the pollution-load levy in 1984 and the financial burdens it incurred for the firms required to pay it are shown in Tables 4 and 5.

Table 4: Pollution Load Levy in Japan, 1984 (SO₂ Emission per Nm³)*

Designated Area	Yen
Osaka, Toyonaka, Suita, Morigushi, Higashiosaka, Yao, Sakai, Amagasaki	3,063.64
Tokyo, Yokohama, Kawasaki	1,854.31
Nagoya, Takai	1,693.06
Kobe, Chiba	1,612.44
Fuji (Shizuoka Prefecture)	1,289.95
Yokkaichi, Kusu-machi (Mie Prefecture)	1,209.33
Kurashiki, Tomano, Bizen, Kitakyushu, Ohmuta	1,128.71
All other areas	179.16

* 1 Nm³ = 2.85 kg SO₂

Source: Japan Environment Agency.

Table 5: Total Amount of Pollution Load Levies Paid by Stationary Sources, 1979-1984

Year	Number of Enterprises Paying Levies	Total Amount of Levies Paid (in millions of Yen)
1979	8,192	49,283
1980	8,248	53,462
1981	8,181	50,618
1982	8,259	54,635
1983	8,382	65,259
1984	8,414	70,003

Note: The total amount paid in fiscal 1987 was about 100 billion Yen.
Source: Pollution-Related Health Damage Compensation Association.

Since the beginning of the 1970s, the total amount of SO₂ emitted by stationary sources has decreased continuously. This is primarily due to strict air pollution control regulations, energy saving measures, shifts to low-pollution fuels and a general change in the industrial structure. As recent studies indicate, the SO₂ levy, too, has made a certain contribution to SO₂ reduction. In Table 6, total SO₂ amounts emitted by stationary sources are set against the development of the pollution load levy in 'other areas.'

Table 6: Development of Total SO₂ Emissions and the Pollution Load Levy, 1975-1987

Fiscal Year	Total SO ₂ Emissions by Stationary Sources (in mill. Nm ³)	Pollution Load Levy in Yen/Nm ³ for "Other Areas"
1975	644.5	8.6
1978	407.3	47.8
1981	315.6	89.2
1984	254.9	179.2
1987	180.2	313.6

Note: 1 Nm³ = 2.85 kg SO₂

Source: Japan Environment Agency, 1988.

A special institution has been established, the Pollution-Related Health Damage Compensation Association to collect the SO₂ levy from about 8,000 firms and to administer the fund. It has one president, one supervisor, and three directors. The president and the supervisor are appointed by the Director-General of the Environment Agency and the Minister of International Trade and Industry (MITI). The directors are appointed by the president. The main office is located in Tokyo, with a regional office in Osaka. In 1985, 70 persons were employed by the association, 63 of them in the main office.

The SO₂ levy to be paid by each polluting firm is determined by the quantity of SO₂ it had emitted in the previous year. The rates of the SO₂ levy are determined each year on the basis of the compensation expenses for the year in question and the classification of areas, which is based on the degree of air pollution. The firms themselves make the calculations, based on preprinted forms. The documents that the firms are to submit with the figures on emission levels include information on such things as the type of fuel used and the level of consumption, the sulfur content of the fuel, and the continuously operating emission monitoring devices that are installed at many large sources of emission. It is generally reported that this information allows for adequate supervision. Furthermore, incorrect information means that the charges to the firms automatically increase because the required compensation sum remains the same. A firm that submits false reports would thereby call interindustrial cooperation into question and could expect corresponding sanctions. According to the Pollution-Related Health Damage Compensation Association, faulty reporting is very rare. (8) Paying the levies on installment is possible if the total amount is more than 300,000 Yen a year. Respite can also be granted (when economic difficulties arise, for example), but the levy is not waived even if a firm files for bankruptcy.

Special Regional Systems

To cope with various drawbacks and gaps in the national compensation system, some prefectures and municipalities have created supplementary compensation systems to provide benefits, for instance, to persons not covered by the national system. The special system administered by the city of Kawasaki and that run by the prefecture of Tokyo are two examples. (9)

The special arrangement in Tokyo, regulated through by-law, has supplemented the national system essentially in two main ways since 1972. First, the circle of persons who can qualify as claimants was expanded (for example, by adding persons under the age of eighteen years who have lived a year in the polluted area). Second, the entire metropolitan

area of Tokyo was designated as a compensation area. (Under the national system only the twenty-three wards of downtown Tokyo have been so designated.) This expanded system allowed 14,000 persons to receive compensation from the budget of the prefecture in fiscal 1984 (at a cost of 400 million Yen). In the same year, 35,000 persons received compensation under the national system.

In Kawasaki the special system was enacted in 1973. In that year, the city authorities raised 300 million Yen from industrial enterprises. In 1974, the city authorities called upon forty-three major enterprises to raise a total of 4 billion Yen to construct and manage a special medical center for pollution disease patients and to cover the costs of other relief measures. The enterprises, in general, responded favorably to the plan. The final compensation system is based on a 'voluntary' agreement with over forty firms that fund it (a commitment made over and above the levies required of them for the national system). The supplementary system was introduced because the city government was of the opinion that the national regulation did not allocate enough money for the cost of living and the costs of medical treatment. Initially, the only persons supported by this supplementary system were those who received no benefits from the national system. Later even beneficiaries of the national system received additional aid. The financial cost of the supplementary system is reported to be approximately 200 million Yen per year. According to the municipal environment agency, the local budget's contribution to the special system runs an average of 35 million Yen per year, primarily to cover administrative costs.

Evaluation of the Compensation System

General Criteria

In judging the effectiveness of the effort to improve air quality, one must keep in mind that the compensation system was designed in times of heated debates over environmental policy as a regulatory instrument intended to ensure the rapid and effective material support of victims of

environmental pollution. To achieve that goal, it was consciously accepted then that scientific or other theoretical bases for certain regulations were either inadequate or nonexistent. Even though the attempt was always made to place the system on a scientific footing, priority still went to ensuring rapid compensation for damages and to making the system practical to administer. Accordingly, it was not one of the *primary* goals of the system to improve air quality and reduce SO₂ emissions through economic incentives. It must also be remembered that numerous different regulatory instruments are used in Japan in air-pollution control policy, a fact that makes it difficult in general to isolate and assess the effect of any one of them. (10)

In Japan, there have not yet been any systematic studies on how effective the compensation system has been in reducing air pollutants. The literature and surveys of experts suggest that the compensation system has rather little *direct* influence on measures to reduce emissions. It is true that pollution control investments in clean-air measures have risen and the emissions and concentrations of SO₂ in the air have declined since the system was introduced, but this trend had already been strong before that point. Furthermore, the SO₂ levy was so low in the system's early years (1974-1976) that no effect on emission-reduction measures was to be expected. It is entirely possible, however, that the firms anticipated the foreseeable increase in levies. Representatives of individual sectors state that the SO₂ levies are an incentive to reduce emissions, especially for firms in the iron and steel sector, the power plant sector, and for some refineries and chemical firms. The compensation benefits for *specific* diseases can be assumed to have a strong environmental effect, for the individual firms responsible for the problem are singled out and charged high costs. The Chisso Corporation, for example, had to borrow 40 billion Yen from the Kumamoto prefecture in order to pay compensation to about 2,000 certified victims. Without this public support, the firm would presumably have gone bankrupt.

As for mobile sources of pollution, the 20% of the compensation budget for nonspecific diseases that is covered by revenues from the automobile weight tax has had no impact on the reduction of emissions from auto-

mobiles. Moreover, the conditions necessary for creating such an incentive do not exist in principle; the 20% contribution must be paid no matter what the actual emissions of automobiles are.

The costs of enforcing, coordinating, and monitoring the compensation system range from moderate to minimal. By their very nature they were higher when the system was being launched than they were later because it was necessary to introduce many initial regulations for which there were still no adequate data or models, international or otherwise. These 'learning and experimentation costs' immediately diminished, however.

In general, the administrative practicality of the system is enhanced by the underlying pragmatic approach of simplifying and minimizing administrative processes right from the start. This concept has made for certification procedures that are normally swift and unproblematic. Problems do arise especially in cases of Minamata disease, however, for checking and diagnosing it is very difficult and complicated. This disease involves not only 'classical symptoms' but also numerous subsidiary forms that make it hard to tell whether they are linked to mercury poisoning.

In the course of time, the examination procedures for Minamata disease have been tightened, with the vast majority of claims being rejected. Such decisions have led in part to considerable conflict with the affected persons and the organizations representing them, one result being that groups of victims occupied the government environment agency in February 1977. Since enactment of the Compensation Law, groups of victims have repeatedly--and sometimes successfully--sued the responsible administrative authorities and the polluting firms. The government has taken some steps at least to accelerate certification procedures by founding the National Institute for Minamata Disease in 1978, expanding the inspection personnel, and passing the special Law Concerning Promotion of Certification of Minamata Disease in February 1979. But these measures have been unable to solve the underlying problems. At the end of 1985 over 5,900 persons were waiting for their applications to be processed. There are also many pending protests and appeals lodged with the review board and administrative offices. Experts do not preclude a conscious ef-

fort to make the certification procedures time consuming and rigid in order at least to delay the payment of compensation benefits, which in these cases are usually very high. Some experts suspect that there are tens of thousands of persons who suffer symptoms of Minamata disease to a greater or lesser degree without receiving compensation. (11)

It must also be remembered that agreements reached out of court or through direct negotiations play a significant role in cases where specific diseases are concerned. Compensation sums paid by firms in the context of such agreements are often far greater than what is legally required. Most of the persons certified on account of specific diseases receive additional compensation benefits through such private agreements.

Opinion is divided as to whether the system's distribution of costs and benefits is equitable. In general, however, it is recognized that the introduction of the compensation system was necessary for the victims to receive fair compensation for damages. Even the Japanese corporate umbrella organizations, KEIDANREN, and other trade associations agreed to have the system introduced. The system has clearly improved the frequently tenuous livelihoods and social conditions of the victims, particularly those who have suffered from specific diseases. It has ensured support and compensation benefits for claims in cases that were not covered by the general social safety net and that would have been very costly and time consuming to press in court.

In the period immediately after it was put into place, the system fully met its main objectives of swiftly and unbureaucratically mitigating the plights of people victimized by environmental pollution through no fault of their own. An additional, more sociopolitical purpose of the law was achieved as well for the most part. In keeping with the polluter-pays-principle, the idea was to keep the sometimes massive social costs of environmental pollution caused by economic activities from burdening the public at large through, say, an expansion of the general social safety net. Lastly, a special aspect of justice figured prominently in the arguments of the victims when the system was being introduced. Part of the reason for saddling the polluters with the burden of the levies was to

keep those responsible for environmental pollution from remaining anonymous.

Critical Views of Japanese Actors

Since the introduction of the compensation system, victims and their organizations, economic associations, and scientists have criticized it, especially its lack of fairness. The attacks have grown increasingly intense in the course of time, and even today there are still heated discussions. Of the many arguments heard against the system, those concerning its basic functions and aspects are summarized in the following sections (12).

As formulated in a position paper prepared by the Federation of Pollution-Related Victims in 1975, the *victims* point out in particular that

- (1) the system unjustifiably discriminates according to age and sex in the payment of compensation benefits, with elderly rightful claimants and women in principle receiving lower payments because the benefits are keyed to the national average income;
- (2) the refusal to pay compensation for property loss and for pain and suffering is unjustified;
- (3) the pensions for physical injuries, being keyed to the national average income, are too low because an individual's income could be higher than that average;
- (4) the payment of compensation benefits should commence when the diseases are contracted, not when an individual's application is made, as is presently the case;
- (5) the designation of class I areas is too arbitrary since there are many victims outside them;

- (6) the catalogue of diseases that qualify a person for compensation benefits should be expanded to include throat, nose, ear, and eye ailments, among others;
- (7) the effects of other pollutants, especially nitrogen oxides, must lead to the designation of new compensation areas; and
- (8) the criteria for certification, especially that for Minamata disease, are too narrow and arbitrary for them to include all the types of diseases involved. Many persons have thus been excluded from the system or have been subjected to tedious certification procedures.

In the criticism from *business and industry* it is mentioned that

- (1) the compensation system lacks adequate scientific foundations and is utterly arbitrary, one example being that the 'natural' rate of respiratory ailments is set far too low, a circumstance that extends the boundaries of the compensation areas. Asthmatic bronchitis should be deleted from the catalogue altogether because it has been shown scientifically that the disease is not caused by air pollutants emitted from industrial sources;
- (2) the self-inflicted respiratory damage in smokers is not considered in the certification process. Smokers should, for example, pay a general duty into the compensation fund;
- (3) the certification criteria are too vague and that the procedure is not strict enough to preclude 'freeloading';
- (4) pollutants other than SO₂, especially nitrogen oxides and dusts, have come to play a more serious role without being considered in the compensation system. Criteria for rescinding a designation as an air pollution area should be established because SO₂ pollution has declined considerably in almost all such areas since the compensation system was introduced;

- (5) the cost distribution is highly unfair in the case of air pollution because (a) the levies paid by firms have soared although the emissions of SO₂, unlike those of some other pollutants, have declined drastically, (b) new firms must pay for problems they did not create, and (c) the share of the air pollution accounted for by automobile emissions has greatly increased, making it only proper that mobile sources of pollution be required to pay much more of the overall costs of pollution than they presently do. Lastly, inter-regional disparities have been growing because the equalization procedure for financing compensation benefits requires firms in less polluted areas to contribute more and more to compensation benefits in areas far away from them. The 1977 rate differentials of levies set for compensation areas has not provided for adequate equalization in this regard.

Scientists have formed no clear opinion about the advantages and disadvantages of the compensation system. Although the original intentions behind the introduction of the compensation system are approved of, the weaknesses and aspects of unfairness that have arisen or that have gradually become more pronounced are pointed out. The following main points are brought up:

- (1) The epidemiological data used as criteria for establishing the incidence of respiratory-tract diseases when the system was introduced are assailable in light of today's scientific knowledge. Thus, the general system of social welfare should bear a larger share of the burden than it presently does. By contrast, other critics hold that exact scientific rationales often cannot be provided for other environmental policy measures either, a case in point being the establishment of emission and, especially, of environmental quality standards. The gray area in those matters is frequently no smaller, a fact that brings up the question of why there should be stricter standards for the scientific foundations of measures having to do with the compensation system.

- (2) Universal and clearly formulated standards should be established for the declassification of areas in which air pollution has greatly declined;
- (3) Other pollutants (especially NO_x) should be taken into account because they have become more relevant than SO_2 . (Classical smog pollution of the London type no longer occurs in Japan, whereas pollution from photochemical smog is still relatively frequent in agglomerations.)
- (4) Automobile emissions should be taken more into account in the apportionment of costs. The differences between the levy rates in polluted areas and those in unpolluted areas should be examined because firms in unpolluted areas are unduly favored.
- (5) While it would be correct in principle to reduce the compensation benefits paid to smokers, such a regulation would be practically and methodologically extremely difficult to enforce.
- (6) The procedure for financial equalization among the various designated areas should be differentiated more than is currently the case so that firms in areas with few victims are financially disencumbered.
- (7) The certification procedure, especially for cases of Minamata disease, should be improved to the advantage of the victims. Present difficulties do not stem solely from problems with medical diagnosis; they could also be the result of deliberate stalling intended to reduce the occasionally immense costs of the firms by dragging out the proceedings.
- (8) The levy system for nonspecific diseases should be changed in favor of the firms that have only recently been founded and that are thus not responsible for the diseases suffered by many of the certified victims.

No uniform conclusions can be arrived at from the arguments for and against the compensation system summarized above. True, it is widely recognized that the introduction of the system was necessary and purposeful given the circumstances of the victims at that time. Most important, the move warded off serious social conflicts. But the system's later development, especially where nonspecific diseases are concerned, has been criticized, sometimes severely, and that not only by economic interest groups. At the same time, only a minority fundamentally repudiates the compensation system altogether, including the benefits paid because of specific diseases.

As logical as it certainly is in principle to focus attention on the system's inadequacies with regard to nonspecific diseases by pointing out that the levy rates for SO₂ have risen steeply despite the drastic decline in SO₂ emissions from stationary sources, the sharp criticism levelled by representatives of business and industry in this respect may be motivated primarily by a general political aspect. Some scientists and the victims' organizations point out that the financial burden of the SO₂ levy, with but few exceptions, is not dramatic enough to explain industry's fierce resistance to this aspect of the compensation system. One suspects instead that industry is concerned with eliminating this part of the system on principle--to shed the quasi official stigma of being the causers of environmental damages and to complicate any future extension of the system to other emissions of industrial pollutants or spheres to damage. In the political realities of both industry and the victims, then, the dispute over the compensation system has great symbolic value superimposed on the criticism aimed at individual parts of the system.

Fundamental Revision of the Compensation System in 1988

In response to the results of an epidemiological study that the Environment Agency had conducted on the relation between air pollution and health damage, the director-general of that institution requested in November 1983 that the Central Council for Environmental Pollution Control analyze problems related to compensation of nonspecific diseases in class

I areas and make corresponding recommendations. A committee of experts of the Central Council then began preparing a comprehensive study on the available scientific knowledge about air pollution and health damage. Published in April 1986, the report was submitted to the Council for deliberation. On October 30, 1986, the Council submitted the final report, in which the following recommendations were made (13):

- (1) Noting the tremendous improvements in air quality since the 1970s, the council stated that air pollution could no longer be considered the main factor causing respiratory diseases. Accordingly, it was recommended that the designation of forty-one areas as class I compensation areas be rescinded and that no further persons be certified as pollution victims for a nonspecific disease. Even in cases of extreme, area-wide air pollution, as with some trunk roads, the council objected to the introduction of a compensation system. Instead, it recommended intensive study of these areas and the implementation of measures there to prevent air pollution.
- (2) In general, the council noted that it was more appropriate to promote comprehensive measures to protect the environment and human health than to pay compensation to individuals, particularly when air pollution by nitrogen oxides in large cities and along trunk roads was involved. The council therefore recommended that a special 'Health Damage Prevention Program' be developed to supplement and increase the effectiveness of the customary environmental protection measures of the national and local governments. Class I areas should be included in this program. It was recommended that environmental improvement programs be set up and that they have plans to reduce air pollution and promote low-pollution cars, among other things. Another recommendation was the immediate establishment of a special surveillance system in critical areas so that the relation between the health of the population and air pollution could be continuously monitored.
- (3) The continuation of compensation payments to pollution victims already certified under the Compensation Law was recommended.

Furthermore, the victims should be allowed to renew their certification if renewal is warranted under previous practice.

- (4) It was recommended that the expenditures required for certified pollution victims should continue to be covered by levies on stationary sources and by a contribution from the automobile weight tax. Some of the costs incurred by the implementation of general programs to prevent health damage should also be borne by firms that pollute the air. The council stated that this support should come as voluntary donations given by those firms causing air pollution and those people whose social responsibility links them to the causes of pollution. In this way, for example, a polluter could not avoid payments even if the original source of pollution no longer exists. The council further recommended that the fund be established with an endowment of 50 billion Yen.

On the basis of these recommendations the Environment Agency developed in 1987 an 'Endowment Plan' to be administered by the Pollution-Related Health Damage Compensation and Prevention Association (the former Pollution-Related Health Damage Compensation Association). According to the 'Endowment Plan' the money for the 50 billion Yen fund will be raised from contributions (donations) from operators of smoke-emitting facilities (40 billion Yen) and the automobile industry (10 billion Yen). This is expected to take seven to eight years. The concerned business circles already have agreed on the 'Endowment Plan' as proposed by the Environment Agency.

Drawing heavily on the recommendations of the Central Council for Environmental Pollution Control, the Environment Agency drafted a bill for the amendment of the Pollution-Related Health Damage Compensation Law. Submitted to the 108th Session of the Japanese Diet, the bill was intensively discussed in the 109th Session, passed in September 1987 and, finally, enacted in March 1988. The long history of an important instrument in Japanese environmental policy, the first of its kind in the world, had come to an end. It is now of great interest whether the Central Council's explicit recommendations to foster a general preventive environmental policy will be followed by politicians and industrialists.

Notes

- (1) For a comprehensive description of the development and functioning of the compensation system see the pioneering studies by Gresser 1975 and Gresser et al. 1981. Cf. also Central Council for Environmental Pollution Control (1973) and Tsuru/Weidner (1985).
- (2) Cf. Environment Agency, 1984, for full-length translations of the Basic Law, the Pollution-Related Health Damage Law and enforcement orders.
- (3) Cf. Environment Agency 1974, pp. 166-1985 and Gresser 1975.
- (4) Environment Agency, 1973: 252-253.
- (5) Cf. Environment Agency, 1973, 1974.
- (6) Cf. Gresser 1975: 50, 229.
- (7) Cf. Environment Agency 1985: 219-220; Environment Agency 1984: 13-69 and Gresser et al. 1981: 290-300.
- (8) Interview with officers of the Pollution-Related Health Damage Certification Board, Osaka, March 1985.
- (9) Interviews with environmental officers of the Tokyo Metropolitan Government and the Kawasaki City Government, March 1985.
- (10) Cf. Weidner et al. 1987.
- (11) Interviews with Takehisa Awaji (Tokyo), Koichiro Fujikura (Tokyo), Kenichi Miyamoto (Osaka), Akio Morishima (Nagoya), March/April 1985, and Takanori Goto (Tokyo), Yoshihito Shinohara (Kawasaki), July 1984.
- (12) This summary of critical arguments related to the compensation system is based on interviews conducted with several Japanese experts from universities, research institutions, local and national government agencies, pollution victims' organizations, business federations and representatives of several large enterprises, July/August 1984 and March/April 1985. See also Aronson 1983, Gresser et al. 1981, KEIDANREN 1976, Miyamoto 1981 and Upham 1979.
- (13) Cf. Japan Environment Summary, Vol. 14, No. 12/1986; Vol. 15, Nos. 10,11,12/1987; and International Environment Reporter, Vol. 10, 10-14-87: 494-495.

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