Pollution Prevention Agreements in Japan: A Case Study of Tomakomai and Kita-Hiroshima Cities

（日本の公害防止協定—苫小牧市と北広島市における事例研究—）

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I. Introduction

Japan is one of the leaders in the development of pollution control technology and has the world's strictest environmental quality standards. At the same time, the country has some environmentally damaged areas. The Japanese are known as a nature loving people, but at the same time some politicians and businessmen are responsible for widespread environmental destruction.

In the last 100 years, Japan has transformed itself from a predominantly agricultural country into one of the biggest centers of industrial production.(1) The growth of major manufacturing industries, particularly after the Second World War, brought about the modernization of the Japan archipelago, but with it also the concentration of people and industries in the cities and extensive pollution problems. Public outcry over environmental pollution in the 1960s forced the government to embark on a major offensive against pollution. In the 1970s, environmental policies were developed and strict environmental standards were enforced. During the 1980s, however, environmental policy declined as a result of rising economic concerns and widespread public apathy. As we enter the 1990s, the future of Japan's environmental policy is torn between the requirements of a healthy economy and a healthy environment. Increasing awareness of global environmental problems could provide the impetus to improve on the poor performance of the 1980s, but this trend could be counter balanced by the desire to make even greater economic gains. This scenario has its parallels in many other developing countries, such as Indonesia.

After the Second World War, all of the nation's efforts were put into developing its economic base. Environmental problems had to reach a critical state, with hundreds of people sick or dying of pollution related illness, before their existence was acknowledged. In response, the government instituted some of the world's strictest anti pollution measures. Now, with equal energy, Japan is once again developing, safe in the expectancy of having solved its environmental problems.

How Japan balances economic growth and environmental protection has far reaching consequences both within and outside the country. For other highly industrialized countries, Japan is an alternate scenario. The great historical and cultural differences between Japan and these countries have caused them to differ not only in their views of technology and development, but in how they deal with their environmental impacts. For developing countries, such as Indonesia, Japan is both an inspiration and a warning. Its undeniable economic success has been achieved at a great social and environmental cost and hopefully this knowledge will cause these developing countries to consider carefully their balance of economic and environmental priorities.

Almost all noteworthy advances in the system of environmental protection in Japan have been made subsequent to accidents. These accidents had disastrous effects on human health and the environment. Although Japan was remarkably successful in developing a highly industrialized society shortly after Word War II, it could not continue its industrial and economic progress without giving proper attention to environmental protection.

On November 19, 1993, the Fundamental Act for Environment(2) went into effect in Japan. It replaced the Fundamental Act for

Environmental Pollution Prevention of 1967 and absorbed the basic idea of Natural Environment Prevention Act of 1972.(3) The new law is labeled "fundamental" because it unites two separate policies into one basic approach on environmental pollution prevention and nature preservation. It also prescribes the basic environmental protection measures that the Japanese government should follow, while also taking into account modern global perspectives. The Fundamental Act takes new steps towards the pursuit of a comprehensive environmental protection in Japan. However, despite its lofty goals, the content and practical application for the Fundamental Act warrant careful examination. Despite the enactment of the Fundamental Act for Environment, there remain many difficult problems to be solved. Therefore, in the next part of this study, we will discuss the Pollution Prevention Agreement in Japan. Finally, we will discuss a case study of pollution prevention agreement in Tomakomai City and Kita-Hiroshima City, Hokkaido.

The scope of environmental protection in Japan spans the issues of the control of environmental pollution to the protection of natural, wildlife, cultural, and historical environment.(4) This study will primarily address the Japanese environmental pollution prevention system and its problems in general and specifically in Tomakomai and Kita-Hiroshima City, while only briefly addressing other fields of environmental law. This focus is taken is not because other fields of environmental law have a subordinate position in Japanese environmental law, but because the present environmental pollution control system is a legacy of several tragic cases and still in the process in of satisfactorily remedying the problem it confronts. Of course, the enactment of the Fundamental Act for Environment does not announce an official end to pollution, but we cannot understand the total Japanese environmental protection system without examining the current function of environmental pollution prevention agreement and its system.

II. Pollution Prevention Agreements in Japan

A. Background

The Japanese archipelago is surrounded by ocean and the ebb and flow of the ocean tides constantly wash its shores. With the abundant rainfall and strong seasonal winds in the winter, there should be no serious air pollution. However at the end of the 1960s Japan had become, in one author's estimate, the most polluted country in the world.(5) What is interesting to note is that by the year of 1976 a remarkable turnaround had occurred, and Japan offered the world an impressive record of achievement. In many parts of the country pollution had declined to a remarkable degree.(6)

Some have suggested that this been achieved with almost no effect on GNP and unemployment.(7) Not surprisingly, therefore, "few areas of Japanese Law have attracted as much interest or comment as environmental protection."(8)

The period 1955-1965 was one rapid economic growth for Japan and the environmental price came in the form of the so-called Big Four pollution cases.(9) The effects of mercury poisoning in the Minamata case were appalling. The effects on the victims included difficulty in thinking clearly, numbness in the lips and limbs, disturbed vision, movement and speech, wild fits of thrashing and senseless shouting and forty percent of victims died as a result of the poisoning.(10)

The chronology of events leading to settlement was almost as disturbing. At first, the polluter, Chisso Corporation, producers of nitrogen based chemical fertilizers and plastics, denied responsibility. The refusal of the polluter to acknowledge scientifically ambiguous evidence, unconscionable settlements with victims involving token "sympathy" payments for forfeiture of legal rights, suppression of scientific evidence, withdrawal of government funding to the research institutions involved, a "see no evil" attitude by government[11] all combine to make the Minamata case a disturbing chapter in Japan history. Only the weight of the other cases and national media attention enabled the victims to finally obtain redress.[12]

Disparity in power of the parties was a serious impediment to redress at Minamata, as it may be in contractual models generally. Thus, reasons for the difficulty in settling the Minamata case included the socioeconomic status of the victims and their dispersal in several separate fishing villages, the economic and political domination of the area by Chisso Corporation, lack of access to legal resources and a disinclination on the part of many of the victims to challenge authority.[13]

This last factor, a high level of respect for authority, is a strong cultural trait in Japan. Other responses of the victims can also be traced to cultural traits. As one author notes, the motivation of the victims went beyond just money and even health and could be better interpreted as desperate last-ditch efforts to preserve family and community. In the words of one victim, "When it began to look like the precious land left by our ancestors might be encroached upon and our grandchildren's generation affected, we could no longer endure."[14]

Perhaps the point, to which we will return later, is that the real underlying concerns of victims can be money, health, short-term or long -term concerns, or a vague culturally specific criteria. Therefore, it may be that only a process which delivers particularized solutions can be sensitive to such individual, localized needs. For example, it was absolutely critical to the Minamata victims that they receive a public apology and admission of guilt personally from the president of Chisso Corporation.[15] That aspect of "damages" is not easily couched in legislation or legal principle, but may only be feasible in negotiated, contractual or agreement-type solution.

Japanese authorities may have been unconscionably slow in responding to the pollution problem, but when their responses came it was fast and effective, and in less than a decade Japan made the transition from pariah to paragon. A psychological and political end to Japan's pollution episode came through stringent pollution control measures, mediation and compensation systems, environmental planning with citizen participation and a dramatic judicial condemnation of government and business.[16]

Briefly the above overall situation could be summaries as follow:[17]

-1965-1969: Introduction of the Basic Law in 1967, attempt to control pollution while still maintaining economic growth; Article 1(2) limits "preservation of the environment" to measure which are "consonant with healthy economic development"; results ineffectual;

-1969-1973: Basic Law amended in 1970 (the "Pollution Diet") to drop the "economic development first" proviso and add stiffer penalties (by 1976 the government was saying, "the overriding concern with public health was the 'non-economic approach' to environmental decision

making");

-1970-Dispute Law establishing two local and one central dispute resolution systems; local government involvement promoted; 1971-creation of environmental Agency; 1972-introduction of Environmental Impact Assessments for public works projects;

-1973-1993; period of lower growth, investment in pollution control equipment, progress on reducing pollution; 1977-ten years Environmental Protection Program (including overall econometric model relating pollution levels to economic activity, pollution- control investment, price effects);

-Post 1993, on November 19, 1993, the Fundamental Act for Environment took effect as a new comprehensive environmental framework. It was formulated and implemented to facilitate the prevention of environmental pollution from the standpoint of nation wide and global environmental protection.

The role of local government was critical, and indeed "the one outstanding exception to the central government's domination of local governments during the postwar era has been the local initiative in the area of pollution control."[18] As well as passing local pollution ordinances, local governments "have also attempted to control pollution by executing pollution control agreements or contracts with individual factories which served as an imaginative device to circumvent inhibition by the central authorities."[19] These agreements allow "factories to tailor controls to different geographical and technical conditions where neither national laws nor local ordinances achieve so fine a tuning."[20] Local government bodies took full advantage of the provisions of 1993, the Fundamental Act for environment which allowed "local government bodies to increase the stringency of regulations in the light of local conditions and which set up limits to such increases while adhering to the policies of national government"[21]

The result is that Japanese ambient standards for some pollutants are the strictest in the world (e.g. sulfur dioxide, nitrogen dioxide, particulate, etc.). They are not just "administrative targets" but rather "serve as critical reference points which are backed by consensus."[22] The way the local government achieves such agreement can be understood by examining the uniquely Japanese system of administrative guidance.

B. Administrative Guidance

Administrative guidance can be viewed from a number of perspectives. Some writers have used the case study approach as their point of departure, while others are more theoretical.[23] Academic doctrine is not yet in agreement as to the necessary of a basis in law (ordinance) for the exercise of administrative guidance. According to one view, the administrative guidance requires a legal foundation. On the other hand, there is the view that it does not need a basis in law.[24]

Generally, administrative guidance is made by an administrative authority asking for a party to take or avoid a particular course of action in pursuance of an administrative aim or policy objective. The head of the Cabinet Legal Department gave the classic definition as follows:

Administrative guidance is not legal compulsion restricting the rights of individuals and imposing obligations on citizens. It is a request or guidance on the part of the government within the limit of the task and administrative responsibility of each agency as provided for in the establishment laws, asking for

a specific action or inaction for the purpose of achieving some administrative objective through cooperation on the part of parties who are the object of the administration.[25]

> Administrative guidance can be broadly defined as a "regulatory technique that, although generally non-binding, seeks to conform the behavior of regulated parties to broad administrative goals."[26]

Administrative guidance essentially works in the following way. A local bureaucracy puts an industrial concern (for example, a potential polluter) on notice that it wants a certain result (perhaps an agreement between the polluter and local area residents as to emissions, conduct and so on). The notice has no formal, coercive legal effect. However, the bureaucracy can and will resort to collateral enforcement (such withholding a building permit and water supply) in the event the polluter does not cooperate.

There is no effective legal right to sunlight and ventilation, but through administrative guidance such a right exists. Municipalities were authorized to issue construction permits, though there were no local ordinances dealing with sunlight and ventilation. There was pressure from local interest groups, which wanted local regulation that would be sensitive to local needs. Unable to get action at a national level, municipalities responded with administrative guidance, which included a requirement that "developers reach an agreement with the surrounding residents regarding the degree to which the planned building might permissibly interfere with the residents' sunlight and ventilation." This administrative guidance was not legally binding. However, the administrative guidance "indicated that the city would not provide water or sewage service to uncooperative developers," or issue construction permits. Note that residents were empowered by the "guidance". This one example of a new "right" granted through administrative guidance. Another example is that local government can enter facilities and do tests for suspected pollution if they feel that such action is necessary.

Thus, by permitting industry to contribute to identifying and implementing its own solutions to a problem, administrative guidance contributes significantly to the effectiveness and fairness of the administrative process.[27] The attributes of administrative guidance that permit an agency to intervene in a variety of areas also strictly limit the form that intervention can take and circumscribe the degree to which the agency may actually intrude and attempt to order affairs. These limitations give the parties a significant, indeed often dispositive, role in the regulatory process.[28]

This process not simply a variant of, or confined to, the government industry relationship. In fact, a "substantial number of these agreements have already been reached between factories, local governments and citizen groups either on a tri-partie basis or with citizen groups participating as observers."[29] Indeed "many recent agreements have been used by the public as a powerful tool to promote 'democratization' of corporate and government decision."[30] This theme of public involvement, with its implications for "democracy," will be considered below. The following table (chart number 1) demonstrates the success of this policy:[31]

The use of administrative guidance has two critical implications in the context of environmental concerns. First, it emphasizes private ordering. Within the overall legislative

Chart 1. Status of Resident Participation in Public Nuisance Prevention Agreements

Year		1974	1975	1976	1977	1978	1979	1980	1981
Number of Enterprises concluding agreements with local public bodies	a. With local residents organizations participating as parties	67	76	95	318	460	541	573	594
Year.			1975	1976	1977	1978	1979	1980	1981
Number of Enterprises concluding agreements with local public bodies	b. With local residents organizations participating as observers		337	384	408	469	518	545	566
Number of enterprises concluding agreements with residents organization alone			1394	1821	2127	2453	2504	2803	2805

and administrative scheme, its "tendency is to forge individualized solutions to difficult problems of resource allocation and benefit and burden distribution."(32) The implications for flexible arrangements sensitive to local concerns are enormous. What really happens is that "the municipalities restructure the balance of power between the interested parties to ensure that each takes the other seriously and deals with the other in good faith."(33)

Secondly, a new quasi-right is created to deal with the absence of any "property-like" rights in the commons of clean air and water. Thus, as in the sunlight and ventilation example mentioned above when "the local authorities compelled the parties to negotiate and bargain, they created in the surrounding residents something resembling a right or entitlement."(34) In this way, "the social ordering and control is frequently handled through private negotiating, under agency supervision."(35) One author asserts that recent extra-judicial settlements are increasingly conferring benefits on members of local communities, who are not even parties to the negotiations, to the extent that these settlements serve as an additional legal means of protecting the environment.(36)

Of course administrative guidance disputes do end up occasionally in court and contrary to earlier policy the Japanese courts will review them. The courts do so with sympathy and deference to the administrative agency, because the Japanese perceive administrative guidance as somehow capturing the Japanese attitude toward the proper role of government. Thus, an environment is created in which judges can be more explicitly sensitive to the social, political, economic, cultural and legal context of the dispute at hand.

Lacking legal compulsion, the courts look to administrative accountability, and judge bureaucratic actions according to societal consensus rather than formal procedure, thus trying to protect the flexibility which is central to the bureaucracy's use of administrative guidance. The courts may also invoke the "abuse rights" doctrine, which requires that rights must be exercised only within a scope judged to be reasonable in the light of the prevailing social conscience.

In summary, some of the important characteristics of administrative guidance should be noted. First, it is sufficiently harmonious with traditional Japanese conceptions of law, dispute resolution and consensus binding that it can withstand scrutiny by the courts. Second, it is grounded in powerful, highly respected bureaucracy, with a penchant for consensus building and a reputation for political neutrality.(37) Third, relative speed, flexibility and low cost characterize the process. To the extent that is a low cost system it contributes to efficient resource allocation by minimizing transaction cost.

Fourth, the use of administrative guidance is substantially free of many legal restrictions in that it has no formal legal basis, though as discussed previously, it is now subject to review by the courts. Fifth, its efficacy is enhanced by the presence of a number of elements; the ability to identify interested parties, a relatively small number of competing interests (making it easier to restructure the bargaining situation), and a dispute whose elements are so varied as to limit the applicability of uniform rules.(38)

However, there are some potentially negative aspects about the use of administrative guidance. Its use is an act of factual, not legal, character, and it "may be dangerous and may easily fail to be enforced without legal ground, so it loses public support. For example, the public may be interested more in unemployment than in the quality of the environment."(39) Other authors note "darker side of the Japanese administrative process is that environmental policies can be abridge or subverted as easily, rapidly and efficiently as they have been created."(40)

Gresser et al notes that Japanese environmental law "is particularly interesting because it is, despite some foreign borrowing, a distinctly indigenous Japanese institution."(41) This opinion suggests that administrative guidance may be culturally specific to Japan, though if Japan can creatively incorporate foreign regulatory techniques then perhaps Indonesia can carry out the same techniques. Haley is more pessimistic when he suggests that "the Japanese experience in environmental law cannot be lifted out of its social and political context".(42) However, there is similarity in cultural context between Japan and Indonesia.

In contrast, Young suggests that "the particularly important historical role of Japan's bureaucracy and its apparent success make examination of Japan's experience especially useful for all countries such as Indonesia that are gradually moving into a industrial economy, with the attendant demands it places on government.(43) That is, with government playing an increasingly interventionist role in Indonesia Pancasila's democracies, perhaps an intrusive administrative guidance-type system, at least in this area, is possible.

To some extent Japan has attained success in protecting the environment and it would be very valuable to transfer the Japanese way of protecting the environment to other countries, such as Indonesia, and to the international environment.

This transfer may be just a matter of time due to the distance obstacle or to the lack of congenial environment in which to apply peculiarly Japanese methods that arise out of peculiarly Japanese experiences. The question is could Indonesians try to reach amicable agreement arrangements with concerned parties across the border in pollution prevention for logging in Indonesia such as the Sumatra,

Borneo, and Irian Jaya forest. The relative cultural and ethnic homogeneity of Japan, with its broad implications for achieving national consensus is, of course, a characteristic conspicuously lacking in the Indonesian community.

C. The Agreement Model for Pollution Prevention

The first postwar pollution prevention agreement recorded was the 1964 agreement between Yokohama City and Kanagawa Prefecture and the Tokyo Electric Power Company over the city's sale of reclaimed land to the company.(44)

The Japanese model of administrative guidance is really an example of creative implementation of the general agreement model in environmental law.

In the agreement, the company has some obligations and the city has some rights. The company promised to meet strict standards for dust, SOx, and noise, to install stipulated pollution control equipment, to use low sulfur, oil and coal, to permit city officials to inspect its facilities, and observe all future municipal instruction for pollution prevention. In return, the company can build its facilities and start the operation.(45) On the other hand, the city, in cases of violation, was authorized to undertake pollution abatement at the company's expense. As a result of Yokohama City's success other municipalities began to require that factories conclude pollution prevention agreements and some municipalities concluded agreements that were wholly unrelated to the sale or lease of the land.(46)

The agreement model postulates bargaining among the parties affected, for example a polluter and groups affected by the pollution or "pollutes", rather than legislative/regulatory model between the polluter and the government. It recognizes reciprocal harm, for example the damage done to a polluter and where a polluter is favored, and attempts to evaluate the impact of various scenarios on both. It is a market-oriented model in that, by allowing parties to freely negotiate, it aspires to an economically efficient result. This is a market-oriented model in contrast to the regulatory model, which as we have seen, is characterized by its re-distributive effects on income. For example, it tends to benefit small, influential groups and imposes diffuse costs on large groups, such as the general public.

Thus, the economic problem in all cases of harmful effects is how to maximize the value of production.(47) In the absence of transaction costs, individuals solve environmental problems by negotiating to achieve the efficient degree of pollution control.(48) This economic result will be independent of any legal regime imposed, where the pricing system is assumed to work without cost.(49)

The model tends to break down where there is a large number of "pollutes". Transaction cost become high, for example, in identifying, organizing and reaching consensus and in these cases the negative role of government regulations may be more efficient. Other basic flaws are the assumptions inherent in economic theory in generally that all economic agents in the market possess complete and perfect knowledge and that "perfectly competitive markets achieve locally efficient outcomes."(50)

In the real world, the agreement model has many problems. Deficient knowledge is a major problem. Environmental effects are often unknown or poorly known, epidemiological data is scarce, pollutant models are inadequate, interspecies extrapolation is of

dubious validity and impacts may discriminate between sensitive groups and individuals.(51) Attempts are made to value benefits, risk, health and even life, but values placed on non-economic variables become increasingly meaningless.

There are many other potential problems. The "willingness" of parties to pay may often reflect only an ability to pay and those unable to pay will not register as willing and so again, the traditional order will be self-re-enforcing. There may be undue influence by one party over another, as with the corporate polluter Chisso and the Minamata victims. Non-parties to the agreement may be blocked from remedies due to lack of will.

The focus of the agreement model tends to be narrow and parochial. Since they lack awareness of broader global implications, local actors may be willing to accept pollution in pursuit of short-term economic interest, notwithstanding unacceptable long-term consequences.

Finally, there is an incentive for individuals not to participate in good faith in hopes of attracting bribes to buy their consent or there is motivation for individuals to participate for political advantage. Consistent standards in enforcement and penalties are lacking and there is a temptation to lower standards to attract industry and employment. "Pollutes" in particular may lack expertise with which to make informal decisions.

There are, on the other hand, many substantial advantages to gain from the agreement model, some of which we have already seen in the Japanese experience. The inherent flexibility permits solutions, which are sensitive to the needs of the parties, and which can facilitate perceived optimal strategies. For example, standards for an existing industry may be set low enough to maintain employment, but not so slow as to discourage new, cleaner industry.

The agreement model also fosters local control and permits participation of those most affected. It nurtures the democratic right of all to participate in the establishing of important societal norms. This function may be a critical aspect of the agreement model and will be discussed below.

"Ownership" by parties leads to a greater likelihood of voluntarily compliance and amicable dispute resolution and less likelihood of confrontation or delay. The parties "buy in" to the regime, rather that have it imposed on them. Moreover, the philosophy is preventive rather than punitive, thus avoiding judgmental, moral condemnation.

Finally, by internalizing "externalities" and moving toward "user pays," the scheme offers a greater likelihood of economic efficiency.

The Japanese model deals with some of these disadvantages without sacrificing the benefits. In particular, it works within an overall legislative regime, which ensure minimal national standards. It utilizes administrative guidance to balance the bargaining positions of the parties. It devolves meaningful power to the local level. Moreover, it creates a right of participation for the community in environmental quality decisions. Most importantly, it fits harmoniously within the context of Japanese social and political life, thereby winning legitimacy.

It will be necessary here to make some broad cultural generalizations, beginning with the notions that the Japanese, like the Indonesians, prefer to have impersonal

"contractualized" relationships with flexible rights and responsibilities which, when litigated, will result in "mutual winners." It is the relationship between parties, rather than the contract, which is important. Japanese abhor the resolution of conflict through abstract, normative principles. As Kawashima observes, "the notion that a justice measured by universal standards can exist independent of the wills of the disputants is apparently alien to the traditional habit of the Japanese people."(52) They are attuned to individualized situations and parties and to an "empirically known, psychologically sensed wrong rather than conceived rights and duties".(53) There is a Japanese eagerness to understand the underlying problems on both sides, reflecting a genuine cultural difference, with the Japanese prone to personalize relationships and to desire outcomes that are mutually satisfying rather than determined by impersonal principles.(54)

Thus, the preferred form of dispute resolution for the Japanese will likely not become a conflict-oriented standing on contractual rights backed by threats of litigation. Rather "the Japanese people prefer extra-judicial, informal means of settling a controversy, and generally abhor impersonal, logical and clear solution."(55) Therefore, the appeal of administrative guidance to the Japanese is its relational nature and not so much the "democratic" aspect. Administrative guidance provides a balance of bargaining power and thus, facilitates a "meeting of the minds" of the parties. They can reach their own solutions within the context of an overall legislative scheme. In the event of dispute, there is an accessible and successful dispute resolution system, which keeps the parties out of court.

At first glance, then, the Japanese environmental model could be appealing for Indonesians. Indonesians would instinctively see all polluters and victims of pollution or "pollutes" as being subject to the same standards of behavior, preferably through legislative norms. That would seem democratic and would also provide the elements of subjectivity, certainty, and "logic" which Indonesians like to think underlies their legal thinking. Their legal relationship is to be universalized, but to some extend particularized, as particularized as in Japan.

Thus, the agreement model, greased to run smoothly by administrative guidance, seems perfect for the Japanese and could be appropriate for Indonesia. However, the model should not be adopted just because it has been successful in Japan. Its appeal to Indonesian culture lies in another aspect of democracy, the participation of parties in processes that will affect them.

As one of writers points out, participation is a key ingredient of meaningful democracy:

> The debasement of public debate over values is a very real phenomenon. Democracy, as presently practiced, does not attempt to provide citizens with the ability to participate in the basic societal decisions that affect their lives. There is considerable evidence indicating that individuals find participation in public affairs burdensome and boring…… We should recapture the sense of freedom as active participation in public decision-making …… By arbitrarily restricting our notion of freedom we have lost the possibility of creating shared, reflective public values.(56)

There is much evidence that the public not only does not consider participation in environmen-

tal matters "burdensome and boring,"but also feel it is essential. As Budhisantoso suggests now is the time that environmental protection must involve government, private industry, conservation groups and individuals together in Indonesia.(57) The suggestion seems to be that citizens aspire to be more than just the product of a clean environment. They also aspire to be part of the process. The Japanese models appear to largely meet those needs.

In essence many or any environmental decisions are in the final instance ones which require societal value judgement and arguably, should not be reserved to administrators. These decisions are complex. Indeed, environmental protection is perhaps the clearest example of "polycentric" problems, those characterized by a large number of possible outcomes with many interest groups.

Notwithstanding that the complexity, the Japanese have devolved decision making down to the lowest possible levels of government and in many cases, the affected parties themselves. If we are going to let the people who live in the communities have their say, then they have to let us know what is in their minds, even if it is unpleasant and untidy

III. Pollution Prevention Agreements: A Case Study of Tomakomai and Kita-Hiroshima Cities

A. Environmental Protection at Local Level

In this study, we have selected two designated cities, Tomakomai and Kita-Hiroshima. The selection of these cities is based on many considerations. First, in Tomakomai, there are many industries such as pulp, paper, oil refining, automobile, electric power, lumber and chemical industries. Second, some pollution problems have happened in this area. Third, in this area, some pollution prevention agreements between the government and industries.

In contrast, Kita-Hiroshima City has some waste disposal facilities, which cause some pollution problem within the area. As well, there are some pollution prevention agreements that have been concluded among the parties such as the municipality, the owners of waste disposal facilities, community groups and the owners of land.

The characteristics of pollution of natural resources in this area are similar to the characteristics of pollution in Indonesia. Pollution problems facing these two cities may happen to or are facing developing countries such, as Indonesia. The findings and solutions for pollution prevention through the pollution prevention agreement model in the study area will be very valuable and useful for Indonesia to protect the environment from pollution, such as from industry and waste disposal facilities.

During 1950s, the local governments followed the national government's targets for economic growth and, thereby, attracted large factories.(58) However, they gradually realized the severe adverse health effects resulting from industrial pollution and began to establish more stringent standards than those set nationally.

However, despite their leadership in many environmental issues, local governments are still strongly influenced by national policy. Local authorities get about forty percent of their revenue from central government, so few of them can afford to directly oppose central government for fear of having these fund cut off.(59)

A rather rapid change in societal attitudes toward pollution occurred in the late sixties. Japan had traditionally been and to a large

extent still is a consensus society, and therefore, the goals and actions decided by society and its leaders largely go unquestioned. In the post war period, the Japanese people accepted and endured environmental degradation as the price of economic growth. In the sixties, some people began to find that the price was too high. In 1963 and 1964, a project for petrochemical complex at Mishima and Numazu, Shizuoka Prefecture, was rejected by local residents and the local governments.(60) In addition, in 1969 the residents opposed the construction of a giant industrial development at Tomakomai.(61)

Local ordinances enable the local governments to cope with environmental problem. A few local governments began to pass pollution control ordinances in the 1960s, most notably the Tokyo Metropolitan Environmental Pollution Preservation Ordinance of 1969 (The Tokyo Ordinance).(62) This ordinance provided the greatest impetus for local legislation. It introduced the idea of the supremacy of environmental conservation over economic growth.(63)

In 1962, Tomakomai City established a new section at city administration called the pollution section. After seven years, on April 1969, the city created regulations for Tomakomai Pollution Countermeasure Council. In the same year, this council began to enforce these regulations. On July 1969, Hokkaido government began to make regulations for pollution prevention.(64)

After 1969, the trend toward decentralization of pollution control was accelerated all over Japan.(65) Many local governments provided newer or more stringent regulations than the national level. For example, several local governments have ordinances requiring an environmental impact assessments including in Tomakomai, Hokkaido.(66) Other unique ordinances specifically protect such things as coastal zones, fireflies, trees along the road, and reed fields.(67) There is a local ordinance prohibiting the sale of organic synthetic detergents containing phosphorous in order to prevent the deterioration of the water quality of Lake Biwa. Another local ordinance establishes a "National Trust" endowed for the protection of scenic and historic sites.(68) Such ordinances have been ruled to be constitutional.

With the authority of national government, local government may also promulgate "guidelines" for land development.(69) For example, the Kawasaki guideline was instituted by the city administration in 1964, requiring land developers to insure that their land development would not harm the environment. Furthermore, in order to receive a building permit, land developers have to obtain the city's approval of their environmental preservation measures before the construction of a building or industrial facility can begin.(70)

Other types of guidelines have incorporated the use of a water supply suspension sanction. If land developer violates a guideline, the local Water Company cuts off the water service to the violator's building. However, on November 8, 1989, in the Musashino City case, the Supreme Court held that a water supply suspension sanction was illegal according to the Water Supply Act article 15 (1).(71) Despite their uncertain legal status, guidelines have become widespread, due in large part to their great popular approval.

B. Pollution Prevention in Tomakomai City

1. Introduction

Tomakomai was a small, natural and clean fishing village when new Oji Paper Co., Ltd.(then Oji Paper Co., LTD) began operations

in 1910. In the eighty years since then, the "city of paper" has grown into urban area with a population of 160,000. During this period, the Yufutsu Factory of Nippon Paper Industries Co., Ltd. (the Dai Nippon Paper Recycling) started operations in 1943 and later the Tomakomai Factory of Hoxy Co., Ltd. and the Shiroi Factory of Daishowa Paper Manufacturing Co., Ltd. were established. Tomakomai Region became a center for paper manufacturing factories.(72)

In 1963, the Tomakomai Industrial Port (West Port) was opened as the world's first man-made excavated port and the construction development of a giant industrial project at Tomakomai started. In 1969, the Hokkaido Development agency, the supervising authority, announced the inauguration of the project. Almost ninety percent of the land for the purposed site had already been acquired and planning for the relocation of five thousand people from the Yufutsu residential district, who were caught in the middle of the industrial complex areas, had already commenced. Despite the residents' objections, the government failed to hold a single public hearing on the project. The official agency response was that the residents would be informed of the government's intention only after an environmental impact assessment on the plant had been completed.(73)

Since 1964, the conflict of local communities and the government turned into confrontations that have profoundly affected the attitudes of local governments to industrial growth. Local governments previously competed aggressively to attract new industries, since industries were perceived as a lucrative additional source of property tax revenues. After this period pollution control became the dominant concern.(74)

The opening of East Port in 1980 induced many firms to set up operations in the Western and Eastern Industrial Bases. Tomakomai has developed remarkably as an industrial center supporting Hokkaido's economy and also as a distribution center serving as a gateway to Hokkaido together with the adjacent New Chitose Airport.(75)

Above all Toyota Motor Corporation Hokkaido started operation here on October, 1992, and is expected to grow as an extensive industry.(76)

The Tomakomai Eastern Industrial Area is a large-scale industrial base located 10 km east of the center of Tomakomai and fifteen km. away from the New Chitose Airport, with a total area of 10,620 ha, extending eight km from east to west twelve km. from north to south.(77)

The city also is developing the Kisei Light Industrial Complex of R&D type, the South Numanohata Industrial Complex and the Akeno Light Industrial Complex. According to the recent data, in 1995, the total number of enterprises in Tomakomai was about 289 companies. The total number of employees is 11, 371 (See chart number 6) and the total value of products is ¥632,091,320,000. In the following section we will examine the present state of conditions in Tomakomai concerning pollution prevention agreement.

2. The Present State

Since the pollution prevention agreement between the city of Yokohama and industry, strategies for environmental pollution prevention have increased in several ways.(78) First, through negotiation, it is possible to specify in more detailed pollution controls that are more compatible with local conditions.(79) Second,

Chart 6. The Total Number of Enterprises, Employees and Products

Years	The Total Number of		
	Enterprises	Employees	Products in ¥10.000
1986	261	9,004	52,541,321
1987	264	8,739	43,933,541
1988	260	8,697	46,751,262
1989	258	9,187	50,719.926
1990	268	9,429	56,664,709
1991	277	9,954	60,212,728
1992	274	10,460	56,177,176
1993	284	10,931	58,692,047
1994	275	10,933	60,884,868
1995	289	11,371	63,209,132

Source: Tomakomai no Kankyō (Tomakomai Environment) 1996.,

the negotiation process regarding terms of the agreements often enables the local government to assist a factory in developing and environmental pollution prevention plan.(80) After the negotiations are concluded, the agreement terms become a basis for administrative guidance. Third, citizen participation promotes the democratization of corporate and government decision making.(81)

In Tomakomai, before March 25, 1976, there were sixteen agreements of different types between the government and industries. These agreements were similar to pollution prevention agreements. At that time, there were called "memorandum" or "confirmation" between government and business. In this area, the use of pollution prevention plan started from 1973 to 1978.

Two types of pollution have occurred in the West Port area. First, from 1973 to 1976, pollution from Oji Paper Manufacture occurred. Black dust came out of the smokestack of this manufacturer and covered the railroad tracks. The railroad companies complained about this pollution, because of that complaint, the manufacturer raised its smoke stack from forty m. to two hundred m.. At that height, the black dust blows further away; and since then, there are no more complaints from the railroad companies.(82)

Second, Pulp Companies pumped liquid waste in Tomakomai River. There were some complaints from the people who live near the river. They said that the river is polluted and emits bad odors. Because of this complaint, in 1985, the polluted river was reclaimed. The downstream of the river was cleaned out. The companies made an underground pipe to pump the liquid waste directly to the sea. Since then, there have been no more complaints from the people who live near the river. However, because of the liquid waste from the company goes directly into to the sea, when the wind blows from the Pacific Ocean, the smell of the liquid waste returns to the land area or seashore.(83) This situation shows that the companies are only able to solve the pollution problems temporarily. In other word, they just move the pollution from one area to another area, which is very harmful for the very valuable living things around the harbor area and in the Pacific Ocean. It would be wise for the companies to solve the cause of problem by building water waste treatment facilities. In this case, the liquid waste would not directly go to the river or the sea. The liquid waste from the companies would go to the facility to be processed and, after removing harmful chemical substances or odors, be disposed of in the river.

Due to the many new industries, the pollution automatically increased. As a consequent of the new development of industries and the increased production, an environmental preservation plan and facility was established in March 1973 in order to monitor the pollution within the area. (See chart number 7).

Chart 7. History of Tomakomai Environment Supervision Center

Years	Occasion
March, 1973.	Tomakomai Antipollution Center was established.
June, 1973.	Air pollution Monitoring Telemeter System was installed at the Tomakomai Anti-pollution Center and began operations.
March, 1980.	Tomakomai Antipollution Center was put under the supervision of the city of Tomakomai.
April, 1980.	Tomakomai Area Environmental Supervision Center was established, Tomakomai Area Air Pollution Monitoring Telemeter System began operations.
1981-March 1985.	The Telemeter System for factories was established
1982-March 1985.	Electrical Board was built on the streets in Tomakomai.
June, 1988.	Airplane Noise Monitoring System was established.
October, 1989.	Air Pollution Monitoring System was updated.
August, 1991.	The CRT replaced Electrical Board Display on the street.
March, 1994.	Telemeter System for factories was updated (lines were) changed to general lines of Nippon Telegraph and Telephone Corporation).
April, 1994.	Air Pollution Emergency Reporting System was updated (simultaneously reporting by facsimile).
June, 1994.	Areas covered by Airplane Noise Monitoring System were expanded.
October, 1994.	Air Pollution Monitoring System was updated.

Source: Tomakomai Chiho Kankyō Kanshi Senta (Tomakomai Area Environmental Supervision Center), Hokkaido Government.

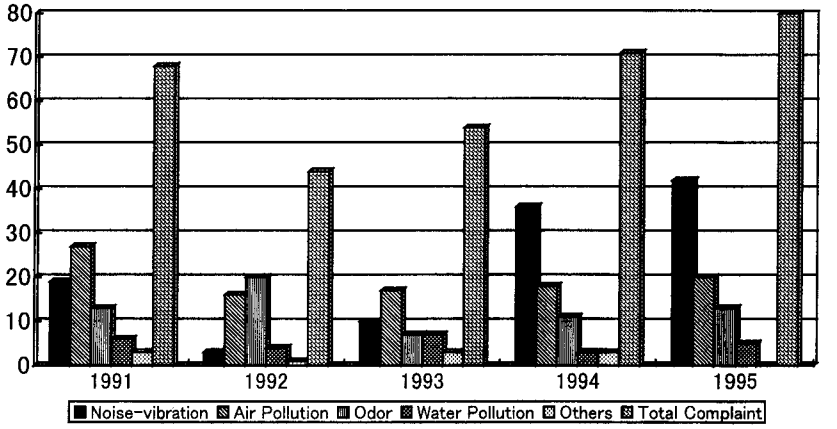
The local government thinks that the quality of life and environment of the community is very important.(84) The city government has tried to handle the societal complaints appropriately.(85) In this area, there are a number of complaints from the city's communities concerning their living conditions. Recently, the main complaints concerning the industrial operation are in wide scope and include health, social and environment problems. People complain that the neighborhood has become overcrowded and about the resulting changes in life style. The administration thinks that not only they responsible to find the solution, but also that everybody is responsible for preserving the environment.(86)

In 1995, the city received 80 complaints from the communities. Those complaints concerned such problems as water pollution, air pollution noise-vibration and odor. The majority of complaints were about noise-vibration (fifty two percent). This complaint is followed by air pollution (twenty five percent) and odor (16.2 percent) and water pollution (6.3 percent) (see chart number 8).(87)

Noise, vibration and odor pollution have a direct impact on the community. This pollution makes everyday life in the community uncomfortable. "Sense pollution" as it is called in the community is become a big problem in Tomakomai City.

There is a correlation between area and complaint. Most of complaints come from the area where population and economic industrial activity are concentrated. About fifty percent of complaints come from the residential area and 31.3 percent from Industrial area (See chart number 9).(88)

Chart 8. The Number of Pollution Complaints in Tomakomai City from 1991 to 1995



The sources of complaint can be summarized into some main categories such as transportation, construction, manufacturing and industry. There are complaints about air transportation. Airplanes and related equipment are about twenty percent of the complaints, followed by construction twenty percent, manufacturing area 12.5 percent and small industry 6.25 percent. The rest are uncertain or other causes (See chart number 10).[89]

The type of damage caused by the pollution can be classified into the following three main categories: pollution that offends the senses and is psychological disturbing (noisy and unpleasant), estate damage consisting of property damage, and pollution causing health problems (headache and lost appetite). The are about seventy cases of sense and psychological damage, four cases of estate damage and four cases of health damage (See chart number 11).[90]

In order to protect the environment from pollution, since 1976, Tomakomai City has been establishing a pollution prevention plan. There are twenty five pollution prevention agreements have been concluded among Hokkaido government, Tomakomai City, surrounding cities and industries.

Chart 9. Classification of Pollution Complaints by the Area in Tomakomai City in 1995

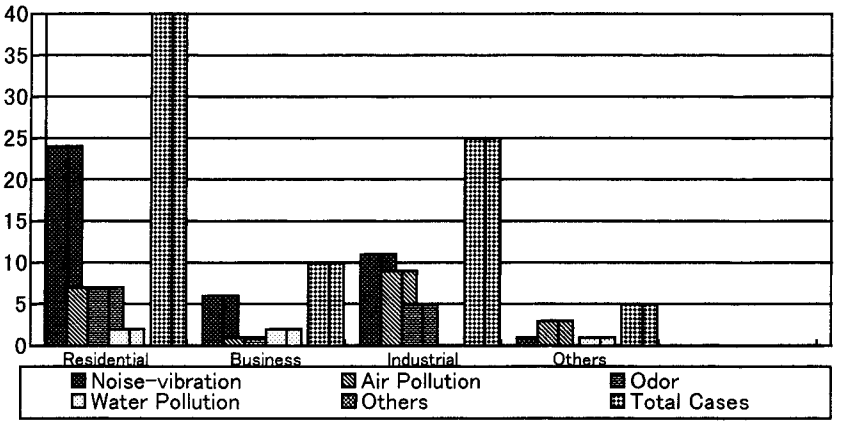


Chart 10. The Sources of Complaints in Tomakomai City in 1995

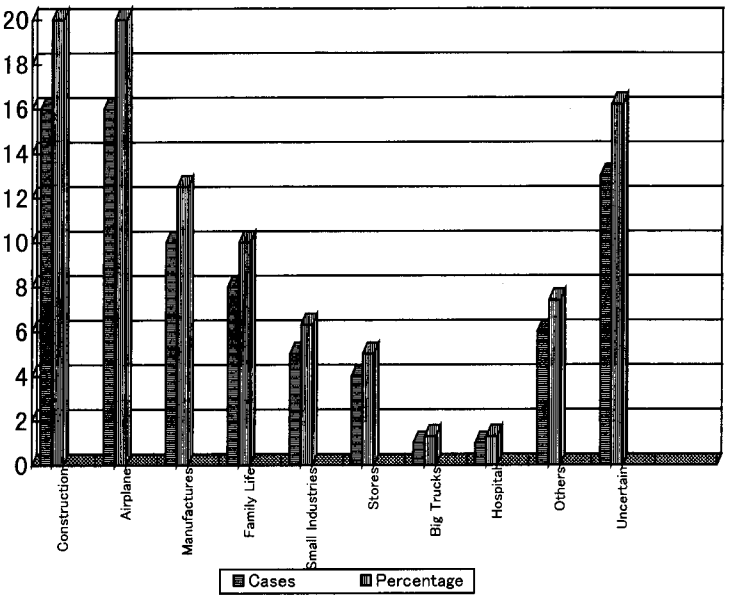
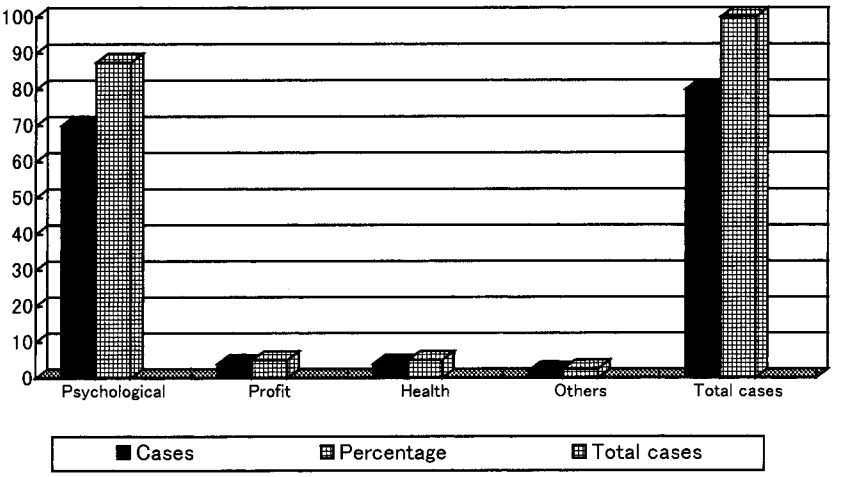


Chart 11. The Damages Classification in 1995



First, the chart number12 shows the number of enterprises that have entered into pollution prevention agreement in the area. These figures apparently include the number of enterprises that have entered into private business agreements.

Second, within the category of local government, it is the prefecture, cities and towns in particular that most often enter into pollution prevention agreements.[91]

As already mentioned above that there are a total of 289 enterprises in Tomakomai.[92] Among of them, ninety-eight are big companies (thirty three percent).[93] There are twenty-five companies that have concluded in pollution prevention agreements.

According to these figures only 8.6 percent of total companies have entered pollution

Chart 12. Enterprises Which Have Pollution Prevention Agreements in Tomakomai

Years	1976	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97
Number of Enterprises	9	10	13	13	15	17	19	20	20	20	20	21	22	22	22	23	23	24	25	25	25	25

Source: Tomakomai no Kankyō (Tomakomai Environment) 1996.

prevention agreements and 25.5 percent of big companies have concluded pollution prevention agreements in the last twenty years (See chart number.13).

In order to encourage and help the enterprises, especially small enterprises, to participate in the pollution prevention agreement program, Tomakomai City and Hokkaido Government help the enterprises with low interest loans. Loans are meant to equip the enterprises with the technology of waste processing. The total loan amounts increase from year to year especially loans from Tomakomai City. Based on data 1995, Tomakomai city gave nine industries loans with total loan of ¥135,790,000 yen (See chart number 14).

3. Classification and Process

In Tomakomai, pollution prevention agreements fall into one broad category of agreements between administration and business.(94) The following points need to be noted regarding the agreement types in connection with a discussion of the typology of pollution prevention agreements.

First, in agreements between an administration and a business, most often cities or towns are one of the parties. Even when the prefectural government is a party, it may only be there to back up the city or town and the area of prefecture that is included. There are five agreements, which have been seven parties' agreements among industry, Hokkaido government, Tomakomai City, Chitose City, Hayakita Town, Atsuma Town and Mukawa Town.

Second, there are twelve agreements that have been three parties' agreements among industry, Hokkaido government and Tomakomai City. In this case, Hokkaido government usually supports Tomakomai City.

Finally, there are eight agreements that have been two parties' agreements between industry and Tomakomai City. In this situation, sometimes the municipality acts on behalf of the interest of community groups to protect the environment from pollution (See chart number. 15).

It is unusual for a local government or the Environment Supervision Center in Tomakomai to include individuals or a group of community in pollution prevention agreements,

Chart 13. The Percentage of Enterprise Have Concluded Pollution Prevention Agreements

Year	The Total Number of				
	Enterprises	Concluded PPA	Enterprises		Concluded PPA
			Small	Big	
1995	289	25	191	98	25
Percentage	100%	8.6%	67%	33%	25.5%

Source: Tomakomai no Kankyō (Tomakomai Environment) 1996.

Chart 14. Loan For Small Industries

(In thousand Yen)

Type	Loan	1971	1972	1973	1974	1975
Prevention		Case Fund	Case Fund	Case Fund	Case Fund	Case Fund
For Air	Tomakomai City		1. 10,000	1. 10,000		
	Hokkaido		2. 80,000			
Water	Tomakomai City	1. 6,500	1. 6,000	2. 10,000	1. 3,790	
	Hokkaido			1. 34,000		
Noise and Vibration	Tomakomai City		1. 10,000	2. 20,000	1. 20,000	3. 40,000
	Hokkaido			3. 52,000	1. 31,000	
Odor	Tomakomai City				1. 35,000	
	Hokkaido		1. 32,500		1. 20,000	
Physical Waste	Tomakomai City			4. 23,000	3. 50,000	5. 92,000
	Hokkaido	1. 40,000		1. 20,000		
Total	Tomakomai City	2. 16,500	1. 10,000	7. 59,000	7. 115,000	9. 135,790
	Hokkaido	1. 40,000	3. 112,500	4. 106,200	2. 51,000	0. 0

Source: Tomakomai no Kankyō (Tomakomai Environment) 1996.

Chart 15. Type of Pollution Prevention Agreement

The Number of			Percentage
Parties	Enterprises	Agreements	
7	5	5	20
3	12	12	48
2	6	8	32
Total	23	25	100

Source: Tomakomai no Kankyō (Tomakomai Environment) 1996.

Chart 16. Tomakomai City Pollution Counter Measure Council Members

Classification	The Number of People	Percentage
Academics	10	50
Community	6	30
Member of City assembly	2	10
Government Official	2	10
Total	20	100

Source: This based on interview with Tomakomai Kankyō Kansi Senta (Tomakomai Environmental Supervision Center) On July 8, 1997.

because the community groups think that the methods of government and industry for preventing the pollution do not meet their expectation.(95)

On the other hand, in Industrial Land Council and Pollution Counter Measure Council, a representative from community groups, members of the city assembly and academics are able to argue about and criticize proposals from industry (See chart number 16). This means that the community groups indirectly participate in the pollution prevention agreement.

The following points need to be added in connection with the types of pollution prevention agreements in Tomakomai. First, the administration is defined as the part of the administration responsible for pollution. The government may be seen as representing community groups or individuals. Second, there are also agreements between some local governments and industry such as Hokkaido government, Tomakomai City and neighboring

towns. This type of agreement may include both those between parts of administrations responsible for coping with pollution and administrations as polluters, and between two administrations or more in charge of pollution control. In the previous case, the agreements resemble those between administration and business, while in the later case the agreements can be described as agreements to work together.

The process of concluding a pollution prevention agreement varies from one type of agreement to another. It depends on the size of industry itself. In case of small industry, it probably takes two to three months from the submission of a land proposal to the signing of the agreement.(96)

In the case of a big company, the process of pollution prevention agreement may take about one year. The process consists of four parts. Each part has three or four steps. For example, Company A concluded an agreement with seven parties. First, on June 1, 1981 this company submitted a land proposal. In the same year, it submitted a construction proposal to the section in charge. Moreover, it consulted with Industrial Land Council. In the second part, in the following year, on January 20, 1982, it submitted the company's preparation work toward a pollution prevention agreement. In addition, it submitted data to the section in charge. This submission was followed by negotiations with the section in charge. This part ended with negotiations with six local governments.

Third, on March 1, 1982, the company received construction permission approval from the government. In this part, the company once more negotiated with the six local governments. The purpose of this negotiation is to confirm the basic problem and the articles in the agreement.

Finally, on June 1, 1982, the pollution prevention agreement was signed and the company could start operations (See chart number 17).

Chart 17. The Process of Pollution Prevention Agreement of Company A (Seven parties' agreements)

Date and year	Process
June 1, 1981 ▽	▼1. Land Proposal Submission 2. Construction Proposal Submission 3. Consultation with Industrial Land Council
January 20, 1982 ▽	▼1. Company A's preparation for a pollution prevention agreement. 2. Submission of data to the section in charge 3. Negotiations with the section in charge 4. Negotiations with six local governments
March 1, 1982 ▽	▼1. Construction permission approval 2. Negotiations with six local governments 3. Negotiations started, the basic problem was recognized and articles in the agreement were confirmed
June 1, 1982 ≫	▼1. Pollution Prevention agreement was signed by the parties 2. The Industry started operations.

Source: This chart is based on an interview with Tomakomai Kankyō Kansi Senta (Tomakomai Supervision Center) on July 8, 1997.

C. Pollution Prevention in Kita-Hiroshima City

1. Introduction

Before coming to Japan, I could not imagine a city where all residents routinely separate their household waste into four categories. This voluntary separation really happens in Japan, especially in the research area. Virtually all newspaper, magazines, glass bottles, aluminum cans and steel cans are sorted and recycled. Residents further remove incombustible materials and hazardous wastes, including batteries and refrigerators. The remaining combustible wastes and large bulky items are sent to a "Resource Recycling Center." There, bulky wastes are screened and salvageable items, such as bicycles, furniture, home electrical appliances, tatami mats, laundry poles , and large branches are extracted and send to a workshop or dealer where they are refurbished and sold to the public.

The remaining bulky waste is shredded and metals are recovered. Some combustible waste is composted and sent to an adjacent greenhouse where it is used to grow plants for sale to the public. Some of the waste was sent to the crushing facility to ground and crush the waste before being buried at the final disposal site.

The incinerator is equipped with acid gas control and is operated by a trained and certified staff. Its emissions are fully monitored.

In short, the Kita-Hiroshima City represents the optimum waste management program in Japan. Over half of some commodities are recycled, with most of the remainder burned for energy recovery. For the recyclable waste from household waste and ordinary business waste such as cardboard, steel cans, aluminum cans and miscellaneous bottles the average recovery rate was 88.2 percent in 1996.[97] Land fill is reserved for only treated residues and inert wastes.

In Kita-Hiroshima City, there is a conscious and well-organized effort to minimize waste and to maximize recycling. Virtually every citizen and industry participates in someway. Because discarded materials are not necessarily waste (they may be resources), the utilization of them can help the nation to be less dependent on other countries for raw materials. The curse of Kita-Hiroshima geography becomes the blessing of its waste management program.

Kita-Hiroshima City has a well-developed municipal waste management program that benefits from a great deal of social cohesion and high degree of active coordination and regulation from local government. As well, the national and regional governments play an active role in shaping municipal solid waste management through subsidies and regulation. The national government in Japan also mandates and helps to coordinate the collection of waste for the most efficient management of municipal wastes.

Even though Kita-Hiroshima City's population is 53,711, the citizens live in total area of 118.56 square kilometer. The population density is 452 persons per square kilometer. Compared to other big cities in Japan, Kita-Hiroshima City's population density is very low. However, the city seriously imposes the solid waste management program.

Japan is heavily dependent on imported raw materials and consequently, the value of refuse as a resource is widely recognized. These factors combine to shape Kita-Hiroshima waste management policies and result in the implementation of many creative and sophisticated techniques. Kita-Hiroshima

has extraordinarily high levels of materials recycling, eighty five percent in the case of some commodities. The city has built many "Resource Recycling Center." During the past twenty years since the first one was built in 1979, six final waste disposal centers owned by private companies, with permission, and another private waste disposal center, without permission, been built.(98)

In order to prevent pollution from the operation of those facilities, the City encouraged them to participate in pollution prevention agreements. Almost all of "Resource Recycling Center," have pollution prevention agreements except one. This one facility has no permission to operate; therefore, it has no pollution prevention agreement.(99)

2. The Present State

Since April 1st this year, the Package and Container Waste Recycling Law, which makes it compulsory for local governments, citizens, and enterprises to collect and recycle waste from packaging and containers, such as paper, glass bottles, cans, and plastic bottles, was enacted. This revised law takes in effect as of December 1st 1997 across Japan, including Kita-Hiroshima City.(100)

Before the Package and Container Waste Recycling Law was revised, the city had enacted some ordinances in order to prevent pollution from household and industrial waste. The first ordinance was the Hiroshima Town Cleaning Ordinance (ordinance number18, 1964). In September 30, 1972 Hiroshima Town made another ordinance, Ordinance Pertaining to Waste Disposal and Cleaning (Ordinance number 24). A full revision of the Hiroshima Town Cleaning Ordinance (Ordinance number 16) was enacted in October 6, 1993. In order to develop the waste management and recycling program in Kita-Hiroshima City, in August 8, 1996, the city revised Kita-Hiroshima City Ordinance Pertaining to Waste Collection and Disposal (Ordinance number. 19).(101)

The aim of these laws is to help provide a solution to the issue of handling garbage, currently a big problem for cities such as Kita-Hiroshima City and many other places across Japan. This law also incorporates the concept of recycling, whereby what has been thrown away as garbage is re-utilized, and the concept of reduction, whereby the wasteful use of valuable resources is prevented. In other words, this law tries to prevent any unnecessary use of natural resources, therefore helps to protect the global environment.

Prior to the enactment of the Package and Container Waste Recycling Law was enacted, on February 29, 1992, Kita-Hiroshima City had collected garbage separated into combustibles and noncombustible. The city also had built the "Resource Recycle Center," and had a recycling program that required that aluminum cans, steels cans, glass bottles and plastic bottles must be collected separately.(102)

In Kita-Hiroshima City household garbage is separated into four categories: recyclable waste, regular waste, large-size waste and harmful waste.

The recyclable waste consists of paper milk cartons, glass bottles, plastic bottles, aluminum cans, and steel cans.(103) Regular waste is non-recyclable, non-hazardous and combustible waste, such as soiled paper, kitchen wastes, filmy plastic of mixed resins and unusable wood. This waste has to go to the incinerator facilities, before being buried in the landfill.(104) The large size, non-recyclable, non hazardous waste that are also non- combustible, such as futons, wardrobes, carpets and TV sets

go to the crushing facilities and are buried in the landfill. The harmful materials, are those that may pose serious environmental threats if they are incinerated, crushed or land filled. Those materials include batteries, refrigerators, tires, oil tanks, fire extinguishers and other items containing mercury and cadmium. These materials are stored and sent back to the dealer for recycling.(105)

The purpose of separating waste and recyclable materials into four categories is to achieve both environmental and economic benefits.(106) The separation of the waste has three more major advantages: first, it conserves resources in order to reduce Japan's dependence on imported raw materials; second, it saves landfill space and reducing pollution from landfills; finally, it makes incinerators less costly to operate and minimizes the pollution from them.(107)

These recyclable stuffs go to the "Resources Recycle Center." After being separated into each category these resources are sold and send to the appropriate industry. Department stores, supermarkets, and container manufactures, all of which use containers, must collect and recycle containers.

Since the recycle waste program has been carried out in this city in 1990, the city has been collected 1,397.7 tons recyclable waste. This recyclable waste was from household waste and ordinary business waste. The chart shows that the total recycled waste has increased drastically every year at a greater rate than the increase of population. In 1990, the total recycled waste collected was 84.6 ton, but in 1996, the total recycled waste was 281 ton. Thus, the total waste recycled has more than double (See chart number 21).

In 1992, the recovery rate was 81.9 percent followed by 87.8 percent recovery rate in 1993. The rate was slightly down in 1994 and 1995 to 80.7 percent and 85.4 percent. Finally, in 1996, the recovery rate was on track again with 88.2 percent (See chart number 22).

In Kita-Hiroshima City, there is only one final waste-processing center that belongs to the municipality. There are seven more final waste-processing centers that belong to private companies. The one that belongs to the municipal handles the household waste of Kita-Hiroshima City. This waste-processing center consists of crushing and processing facilities and landfill for burying the grounded and cru-

Chart 21. Record of Collection by Year and Type (Household waste and ordinary business waste)

(Unit: metric ton)

F Y	Cardboard	Cans		Miscellaneous	Total
		Steel	Aluminum		
1990	9.6	22.7	6.0	46.3	84.6
1991	8.4	34.8	12.9	97.0	153.1
1992	7.1	36.0	18.7	121.6	183.4
1993	8.0	38.2	21.3	110.5	178.0
1994	8.0	87.0	32.8	126.4	254.2
1995	5.7	90.0	40.1	127.6	263.4
1996	5.1	118.4	43.6	113.9	281.0
Total	51.9	427.1	175.4	743.3	1.397.7

Source: Outline of Waste Management in Kita-Hiroshima (as of FY 1997).

shed waste, that were built in 1980. This waste-processing center is also equipped with a "Resource Recycle Center," which was completed in February 29, 1992.(108)

The other seven waste-processing centers handle only the industrial waste disposals. The first private waste disposal center was completed and started operation on September 7,1989. This center was followed by the second, third, fourth, fifth private waste processing center in 1990, 1993, 1994, 1996 and 1997 respectively.

The last waste-processing center is not recorded in the municipal records because it does not have permission yet, but has been operating.(109) These waste disposal facilities generally handle industrial trash, such as construction debris, plastic, metals, glass and rubber waste (See chart number 23).(110) Most of waste disposal facilities in this area consists of stable type, which have a bad impact on the environment, such as raising the underground temperature. The trees and grass in the surrounding area can not grow properly and the toxins directly leak into the land, underground water and river.(111)

The former landfills are very difficult to use for other activities, such as industry, farming or housing.(112) Former landfills are very dangerous, because of methane and ammonia gas. A fire in the area will cause a blow out. Such a blow out happened in Sapporo in 1985.(113) In Saitama prefecture, there was an accident in a waste disposal facility producing harmful chemical substances.(114) Such accidents take time and a lot of money to resolve.

The increase in the number of private waste disposal centers in Kita-Hiroshima City in last seven years has caused complaints from the community and local government.(115) The number of waste disposal centers in the city has outnumbered of the needs of the city itself. The city is obliged to have a final waste disposal facility to manage and process their own waste such as household waste and industrial waste, but it is unfair and unreasonable for the city to receive a neighboring city's household or industrial waste. There are about twenty to thirty complaints about the existence of waste disposal facilities every year. The complaints come from the community either close to the facility or five to six kilometer from the facility.(116)

Community groups complain that there are too many the private waste disposal facilities in Kita-Hiroshima City and they have petitioned the Hokkaido government about this problem.(117) Moreover, the private waste disposal facilities have created some problems, such as underground water pollution, smoke, odor, crows and scattered garbage on the

Chart 22. Recovery Rate of Recyclable Waste

(Unit: ton)

Fiscal year	Collected volume	Sale volume	Recovery rate
1992	223.9	183.4	81.9%
1993	202.7	178.0	87.8%
1994	314.8	254.2	80.7%
1995	308.4	263.4	85.4%
1996	346.1	305.3	88.2%

Source: Outline of Waste Management in Kita-Hiroshima (as of FY 1997).

Chart 23. The Number of Waste Disposal Facility in Kita-Hiroshima City in 1997

No	Company	Location	Type/ Form	Area (m^2)	Note
1	Kita-Hiroshima City	723 Wattsu	Control	199,446	ncinerator, Crusher And Water Treatment Facility
2	Ichinaka Kenko	Nishinosato	Stability	17,772	Incinerator and Crusher. There is environmental impact and problems
3	Sasaki Masami	Nishinosato	Stability And using Fire	3,687	Concrete Crusher Close to the residents Area, damage to Vegetation
4	Watanabe Kogyo	Nishinosato	Stability	9,904	
5	Senke Kogyo	Omadari	Control	4,434	
6	Aluminum Sogyo	Wattsu	Stability	9,578	
7	Toyohira Koeki	Omadari	Control	900	
8	Misono Sangyo	Nishinosato	Using fire		Not registered no PPA and permission

Source: Sanitary division, Kita-Hiroshima City and Community's Group.

street.(118) For example, last year, about 1,200,000 goldfish died in a pond close to one of the waste disposal facility.(119)

Kita-Hiroshima City should not be the recipient of either industrial waste or household waste from a neighboring city. Sapporo City should have its own industrial waste disposal center. The Kita-Hiroshima City government had already wrote a petition to the Hokkaido government and asked Sapporo City to stop sending waste to the Kita-Hiroshima City. The answer from the Hokkaido government was that "there is no such a regulation to restrict the activities."(120)

In order to prevent pollution from the activities of waste-processing centers, the local government urges the municipal waste-processing centers and other private waste disposal centers to conclude pollution prevention agreements.

In Kita-Hiroshima City, the prevention pollution agreement has been in existence since 1979. This first agreement was between the Kita-Hiroshima City and the villages' associations within its territory. The following chart (chart number 24) shows the number of waste-processing centers that have concluded pollution prevention agreements. Most of the waste processing／ disposal centers have entered into agreements.

Since 1989, there is one private company that has renewed its pollution prevention agreement two times in 1993 and in 1995. On the other hand, in 1997, there is one company that does not have agreement due to the fact that waste disposal center does not have permission

yet.

3. Classification and Process

In Kita-Hiroshima City, pollution prevention agreements fall into broad categories of agreements. There are agreements between (1) administrations and administrations, (2) administrations, community and business, and (3) business and administrations, community and individuals.[121] (See chart number 25). The following points are to be noted regarding those three types in connection with a discussion of the typology of pollution prevention agreements.

In agreements between an administration and an administration, such as Kita-Hiroshima City and the villages within its territory, are to promote and support the pollution prevention agreement plan and also to encourage the villages to participate in the program itself.[122] This type of agreement may include both those between administrations as parties managing pollution and administrations as the creators of pollution, and between two administrations in charge of pollution control in 1979 (See chart number 25). This type of administration/administration agreement may be described as agreements to work together. The letter agreements resemble those between administration and business.

There is also variation in two party agreements between an administration and a business.[123] The agreement is defined as a means for the administration to cope with pollution. In this position, government may be seen as being in the position of community groups or individuals. Such agreements are among the administration, business and the community, including those community representatives who oppose the project site. This trend has been further encouraged, where administrations act jointly as one party (three party agreements).[124]

Chart 24. Number of Waste Disposal Site, which Concluded Pollution Prevention Agreement in Kita-Hiroshima City

Year	Number of WDC Established	Number of PPA Agreement Concluded	Classification of PPA
1979	1	1	Two parties
1989	1	1	Four parties
1990	1	3 (1993 and *1995)	Three parties and*Two parties
1991	1	1	Four parties
1992	1	1	Four parties
1996	1	1	Two parties
1997	1	1	Four parties
Total	7	8	

Source: Sanitary division, Kita-Hiroshima City, Interview in September 11, 1997 and Kitahiroshimashi Nishinosatono Kankyo o Mamorukai Daihyo to Hokkaido Gomi Mondai Nettowaruku Daihyo (representative of Environmental Preservation Association for Kita-Hiroshima West Villages and Hokkaido Garbage Problem Network). *The same Waste Disposal Site concluded two times pollution prevention agreement in 1993 and 1995.

Chart 25. Classification of PPA in Kita-Hiroshima

Classification	1	2	3
Parties	Administration/ Administration or Administration/ Business	Administration/ Business/ Community Representative	Administration/ Business/ Community's Representative/ Land owner

Source: Interviewed in September 11, 1997. with sanitary division, Kita-Hiroshima City.

For Kita-Hiroshima City, it is not unusual to have four party agreements. In this agreement besides the administration, business, and the community, there is one more party that is a representative of the owner of the land.

The following points need to be added in connection with the types of pollution prevention agreements. First, administration as defined above means administration as the party managing pollution. There are also agreements between administration as creators of pollution; however, in this area there is only one case of such an agreement. This agreement is between Kita-Hiroshima City and the villages within the Kita-Hiroshima City. In such case, the Kita-Hiroshima City may be seen as being in the position of business and the villages as being in the position of the party managing pollution. This type of agreement can be regarded as an agreement between business and administration.

Second, in the three party agreements, there are also agreements where a private person is one of the parties. In this city, the private person is usually a representative from a community, which is opposed the establishment of the waste disposal center. Functionally, this type of agreement is initially concerned with impact of pollution produced by the waste disposal facility, but the agreement is mainly aimed at pollution prevention.

Third, there are also the four party agreements where a landowner is included in the agreement. The land owner is concerned with the final maintenance of the site after it has been used as landfill. This type of agreement is initially concerned with compensation for damages caused by pollution, but is also aimed at pollution prevention.(125)

The process of concluding the pollution prevention agreement in Kita-Hiroshima City is very simple. In the case of agreements among administrations, waste disposal centers, private persons, community representatives and landowners, the agreement took only a couple of weeks. The process consists of three stages: first, submission of the proposal of agreement, second, negotiation and finally the signing of the agreement document.(126) This type of process may be described as simple and saving energy and time.

In the case of two parties' agreement, the administration and business mainly control the process. Moreover, in three and four parties' agreement process is similar to the two parties' agreements. The third and fourth parties usually just sign the agreements that have been negotiated by the administration and business.(127)

Furthermore, in the process of concluding the pollution prevention agreement, the community group usually receives pressure from either the administration or the business. The administration usually says if the community group

submits a strict prerequisite in the draft of the agreement, the agreement can not be concluded. Finally, the business always put pressure on the community group by saying that they can establish the facility, even without a pollution prevention agreement with the community group.(128)

IV. Analysis of Pollution Prevention Agreements of Tomakomai and Kita-Hiroshima Cities

In this section we try to analyze the pollution prevention agreement as a tool to protect the environment from pollution in Tomakomai and Kita-Hiroshima City. Especially, we are concerned with conditions that affect the relative success of the institutionalization of such an agreement.

Pollution could be defined as air pollution, water pollution, noise problems, vibration, ground subsidence and offensive odors. In addition to the blocking of sunshine or scenic views, which occur over a considerable area as the result of industrial or other human activities, could also be defined as pollution.(129) Environmental protection include natural resources, such as forests, seas, good scenery, beautiful spots or cultural assets in addition to the items stated above.(130)

Furthermore in article 2 (1) of the Fundamental Act for Environmental Pollution Prevention(131) defined the term "environmental pollution" as meaning;

> Any situation in which human health and the living environment are damaged by air pollution, water pollution (including the deterioration of the quality and other condition of water as well as at the bed of rivers, lakes, the sea and other body of water……),. soil pollution, noise, vibration, ground subsidence (except for subsidence caused by drilling activities of mining……) and offensive odors, which arise over considerable area as a result of industrial or other human activities.(132)

Pollution prevention in this study may be defined as preventing any situation whereby human health and environment would be damaged by air, water, or soil pollution, noise, vibration, ground subsidence or offensive odors.

One irony of Japanese society is that special interest' groups can more easily get results than people representing the interest of society as a whole.(133) Our goal is to identify factors that determine the relative success of institutionalization of the pollution prevention agreement in this situation. While we intend to make our theoretical framework as general as possible, we shall limit our analysis to a specific field, for example the pollution prevention in Tomakomai and Kita-Hiroshima City. This seemingly narrow focus can be justified because environmental destruction is really one of the most serious problem facing any industrialized or developing country.

We cannot expect that any new pollution prevention agreement can be institutionalize by effort of a single agency. That result would require collective effort and activities of many people.

According to Hawkins and Thomas, policy enforcement is developed and implemented through interactions between, on the one hand, agency officials and professionals and, on the other, between the agency bureaucracy and interest groups, legislators and the regulated industry.(134)

From this point of view, we use a social constructionist approach to understand the nature of the institutionalization of the pollu-

tion prevention process. The object of this analysis is not to discredit environmental claims, but rather to understand how they are created, legitimated and contested.

In organization theory, a social constructionist perspective referred to as the "social constructionist view," focuses primarily on the interpretation of reality by individual members of bureaucracies.(135) The social constructionist perspective helps to understand the regulatory process as it concerns the way tasks and problems are defined and explained and why lower-level apparatus will enforce some policies or rules and neglect others. The process of social construction can lead to institutionalized, shared values that, in effect, become ideologies with considerable influence on agency policy.(136)

Since 1973, social constructionism has increasingly moved towards the core of social problems theorizing, generating a critical and empirical contribution to social theory.(137) Constructionist theory has gained currency in other academic specialties as well, notably science and technology(138), gender relations and media studies.(139) In each case, what the constructionist analysis has in common is a concern with how people assign meaning to their world.(140)

A social constructionist perspective on the environment has several advantages over other theoretical approaches. First, in contrast to much of the existing sociological literature on the environment, social constructionism does not uncritically accept the existence of an environmental crisis brought on by unchecked population growth, over production, and dangerous new technologies. Instead, social constructionist perspective focuses on the social, political, and cultural processes by which environmental conditions are defined as being unacceptably risky and, therefore, actionable. Environmental debate reflects the existence not just of an absence of certainty about industrial pollution and the extent of the hazardous waste problem, but rather the existence of contradictory certainty. The contradictory certainty consists of severely divergent and mutually irreconcilable sets of convictions both about the environmental pollution we face and the solutions that are available to us.(141)

Environmental risk and problems as socially constructed entities need not undercut legitimate claims about the condition of the environment, thereby, denying them as objective reality.(142) As Yearly observes, demonstrating that a problem has been socially constructed is not to undermine or debunk it, since "both valid and invalid social problem claims have to be constructed."(143) Similarly, social constructionism, as it is conceptualized here, does not deny the independent causal powers of nature, but rather asserts that the rank ordering of these problems by social actors does not always directly correspond to actual need. To a considerable extent, this reflects the political nature of agenda setting. As Bird argues, understanding how environmental problems have been socially and politically negotiated gives "enormous normative weight."(144)

Second, much of the manufacturing of environmental problems is carried out in arenas that are populated by communities of specialists, including scientists, engineers, lawyers, medical doctors, government officials, corporate managers, and political operatives, rather than in the full view of the general public.(145) As a result, research perspectives, which focus exclusively on public discourse, fail to fully capture the details of the environmental agenda

setting and policy making. A social constructionist approach, by contrast, recognizes the extend to which environmental problems and solutions are end product of a dynamic social process of definition, negotiation and legitimization both, in a public and private setting.

Third, a social constructionist approach grounds the study of an environmental matter in a distinctly sociological paradigm. By contrast, much of what has heretofore fallen under the label of "environmental sociology" arises from an extra-disciplinary discourse, which demands that the analyst subscribe to a new set of ecological values. Lundquist argues that in the case of environmental political science, the primary goal of studying environmental problems should be to push forward the frontiers of the discipline rather than to secure an ecology sound "futuropia."(146) That is not to say that environmental sociologists should deny the seriousness of the threats faced by our planet; nor are they advised to embrace the growth centered ideology which characterized mainstream sociology in the past. Rather, we should deliberately adopt the skeptical stance required by constructionist approach in order to optimally assess how environmental knowledge, risk and problems are socially assembled.(147)

In this study, we may conclude that the social constructionist approach may be defined as how individuals, groups or categories of people interpret or assign meaning to the social reality toward their world.

Conceptualized this way, we may use the sociology of social constructionist theory to drive our basic analytical framework.

The Constructionist approach is not only helpful as theoretical stance, but it can also be useful as an analytic tool. In this regard, Best suggests three primary foci for studying social problems from a social constructionist perspective: the claims themselves, the claims makers and the claim making process.(148)

According to Best, there are several key questions to be considered when analyzing the content of a claim: What is being said about the problem? How is the problem being typified? What is the rhetoric of claim making and how are claims presented so as to persuade their audience?(149)

Best analyzes the content of social problem claims by focusing on the "rhetoric" of claim making. Rhetoric involves the deliberate use of language in order to persuade. Rhetorical statements contain three principal components or categories of statements: grounds, warrants and conclusion.(150)

Grounds or data furnish the basic facts, which shape the ensuing claims making discourse. There are three main types of ground statements: definition, examples and numeric estimates. Definitions set the boundaries or domain of the problem and give it an orientation; that is, a guide to how we can interpret it. Examples make it easier for public bodies to identify with the people affected by the problem, especially where they are perceived as helpless victims. In estimating the magnitude of the problem, claims makers establish its importance, its potential for growth and its range, often in "epidemic" proportion.

Warrants are justifications for demanding that action be taken. These can include presenting the victim as blameless or innocent, emphasizing links with historical past or linking the claims to basic rights and freedoms. For example: (1) The environment is vulnerable: (2) The environment is limited: (3) Pollution is very dangerous for human beings and the

environment: (4) The environment is an inheritance from our ancestor and our responsibility is to past it on to future generations.

Conclusion spells out the action, which is needed to alleviate or eradicate a social problem. This frequently entails the formulation of new social control policies by existing bureaucratic institutions or the creation of new agencies to carry out these policies.

In looking at the identity of claim makers, Best advises that we pose a number of questions.(151) Are claim makers affiliated to a specific organization, social movement, profession or interest group? Do they represent their own interests or those of third parties? Are they experienced or novice?

Many studies, which have been undertaken in the social constructionist mode, have pointed to the important role played by medical professionals and scientists in constructing social problem claims. Others have noted the importance of policy or issue entrepreneur politicians, public interest law firms, and civil servants, whose careers are dependent upon creating new opportunities, programs and sources of funding. Claims makers may also reside in the mass media, especially since the manufacture of news depends upon journalists, editors and a diverse number of other news sources.

Best(152) poses a number of useful questions about the claims making process. Who did the claims maker address? Were other claims makers presenting a rival claim? What concerns and interests did the claims makers' audience brings to the issue and how did these shape the audience response to the claims? How did the nature of the claims or the identity of the claims makers affect the audience's response?

The issue of environmental pollution, such as water pollution, air pollution, vibration, noise and offensive odor, in Tomakomai and Kita-Hiroshima City, while morally charged is tied more directly to scientific findings and claims.(153)

Environmental pollution has a more imposing physical basis than social problems, which are more rooted in personal problems that become converted into public issues.(154)

The respected American sociologists James Coleman and Donald Cressey briefly illustrate the constructionist definition of social problem by noting that "pollution did not become a social problem until environmental activists were able to convince others to show concern about condition that had actually existed for some time."(155) However, the question arises as to whether people need to know about pollution for it to exist.

Since the pollution is our pressing concern, we believe that social constructionist analysis is worthwhile. We also expect that our hypothesis will have wider application, even though different situations will probably require different sets of variables, we expect that factors that impact on pollution prevention in one direction in a certain situation will produce effects in the same way in another setting. Thus, we only need to pay attention to the possibility that the absolute levels of achievement will differ from one case to another, depending on the interaction between those basic factors and the characteristics of specific situations.

With this framework as a backdrop, we will now look at two examples of pollution prevention agreement cases in Tomakomai City and Kita-Hiroshima City.

The Tomakomai City case is different

from the Kita-Hiroshima City case. The nature of those two areas is different in some ways, such as the source of pollution, the relationship of authority and the community group, and public participation.

In Tomakomai City, the source of pollution is from the industries and manufacturers and the existence of the industries is part of the development of the city. On the other hand, in Kita-Hiroshima City, the source of pollution is the waste disposal facilities which they just have been built in the last seven years.

There is a difference relationship between authority and community groups in both study areas. Tomakomai has wide range of relationships to the community groups, but Kita-Hiroshima has a closer relationship with the community groups. In addition, in Tomakomai City, there is no direct public participation in pollution prevention agreements, whereas, in Kita-Hiroshima City community groups are able to participate in concluding the agreement.

On the other hand, the content of pollution prevention agreement in Tomakomai City is more specific, especially concerning the limitations and details of the disposal of toxic waste from industries. In contrast, in Kita-Hiroshima City, the content of the agreements tends to be general with no limitations for toxic waste disposed of by the facilities.

The percentage of businesses included in the pollution prevention agreements in Kita-Hiroshima City is higher than in Tomakomai City. However, in both cases the number of complaints from communities about pollution such as offensive odors, vibration, noise, air pollution and water pollution is still high.

Tomakomai City can be said to have a low rate of institutionalization of the pollution prevention agreements (about eight percent of the industries within the area). In the Kita-Hiroshima City case all of the facilities concluded pollution prevention agreements except the one without permission. Since complaints in both cases are still high, it is a sign that the institutionalization of the pollution prevention needs to be examined, if we wish to understand the pollution prevention institutionalization and the difficulties involved in the process.

Indeed, we can understand even from these very rough descriptions some ideas about the relationship between the result of these cases and factors, such as assembling the pollution claim, presenting pollution claims and contesting the pollution claims. If our goal is to explain outcomes of social constructionist framework for any environmental protection, we should certainly be able to explain the differences both of these cases.

In defining pollution prevention, bringing the problem to society's attention and provoking action, claims-makers must engage in a variety of collective activities. Some of these activities are centrally concerned with the collective definition of potential problems.[156] This is not to say that elements of definition and action do not interweave constantly. Nevertheless, pollution prevention does follow a certain temporal order of development as it progresses from initial discovery to policy implementation.

From the two prior models, we can draw three process through which a public arena is built around a pollution problem[157] and three tasks which are necessary for a pollution issue to originate, develop and grow powerful within the political system.[158]

Borrowing from Susskind, in considering the construction of pollution prevention, it is

possible to identify three key tasks: assembling, presenting and contesting claims (See chart number 26). The task of assembling environmental pollution claims concerns initial discovery and elaboration of an incipient impact of the pollution. At this stage, it is necessary to engage in a variety of specific activities. These activities are naming the pollution and its impact, distinguishing it from other similar or more encompassing pollution, determining the scientific, technical, moral or legal basis of the claim and gauging who is responsible.

The pollution problem frequently originates in the realm of science. One reason for this phenomenon is that ordinary people have neither the expertise nor the resources to find the impact of pollution.

Some of the pollution problems, however, do relate more closely to our life experiences. Concern over toxic wastes frequently begins with local citizens who live close to the industrial and waste disposal facilities. The people come to draw a causal link between the impact of those facilities and a perceived increase in the neighborhood incidences of human diseases such as skin disease, respiration problems, leukemia, miscarriage, birth defects and other ailments. In addition, the impact on environment in the form of lost of and damage to animals, fish, plants and crops can also cause people to make such casual links.

Those who jobs or recreational pursuits bring them into close contact with nature on a daily basis (farmers, anglers, wildlife officers,

Chart 26. Key Task in Constructing Pollution Prevention

	Assembling	Task Presenting	Contesting
Primary Activities	1. Discovering the problem 2. Naming the problem 3. Determining the basis of claim 4. Establishing parameters	1. Commanding Attention 2. Legitimating 3. The claim	1. Invoking Action 2. Mobilizing Support 3. Defending ownership
Central forum	Science	Mass media	Politics
Predominant" Layer of proof"	Scientific	Moral	Legal
Predominant Scientific roles	1. Trend spotter 2. Theory tester	Communicator	Applied policy analyst
Potential pitfalls	1. Lack of clarity Ambiguity Conflicting Scientific Evidence	1. Low visibility 2. Declining novelty	1. Co-optation 2. Issue fatigue 3. Countervailing claims
Strategies for Success	1. Creating an experiential focus 2. Streamlining Knowledge Claim 3. Scientific division of labor	1. Linkage to popular issues and causes 2. Use of Dramatic Verbal and Visual Imagery 3. Rhetorical tactics And Strategies	1. Networking 2. Developing technical expertise 3. Opening policy windows

Source: Susskind, L. E., Environmental Diplomacy: Negotiating more Effective Global Agreement (1994).

environmentalist students, politicians, professors and residents) may also be the initial source of claims. They pick up early pollution warning signals such as damage to carrot and garlic crops or the dead of fish in Kita-Hiroshima City.

In researching the origins of pollution claims, it is important for us to ask where claims come from, who owns or manages them, what economic and political interests the claims makers represent and what type of resources they bring to the claim making process.

In the present day pollution claims makers are more likely to take the form of a professional social movement with paid administrative and research staffs, sophisticated fund raising programs and strong institutionalized links to both to legislators and the mass media. Some groups even use door to door canvassers who receive a hourly wage or get to keep a percentage of their solicitation. Campaigns are planned in advance, often in a pseudo-military fashion. Grassroots participation is not encouraged beyond "paper memberships" with control centralized in the hands of a core group of full time activists.

The process of assembling pollution claims often involves a rough division of labor. While there are notable exceptions, research scientists are normally handicapped by a combination of scholarly caution, excessive use of technical jargon and inexperience in handling the media. Indeed, the nature of the relations between the news media and community groups such as Hokkaido Waste Problem Network has become sufficiently institutionalized. It would be difficult for an emergence pollution problem to penetrate the mass media arena without at least some validation from them.

In assembling a pollution claim, using a concept easily understood by society is the best approach. The more readily comprehensible the constructs of nucleus, the more likely it is to stick in the public mind, for example "extinction" or "destruction." Sometimes, the basic claim only becomes clear in the context of a political or economic crisis or a natural disaster.

In presenting pollution claims or issues, community groups have a dual mandate: they need both to command attention and to legitimize their claim.(159) To command attention, a potential pollution problem must be seen to be novel, important and understandable, the same values which characterize news selection in general.(160)

One effective way of commanding attention is through the claimant's use of graphic, evocative verbal and visual imagery, such a song. Thus, the extreme photographs of and interviews with the pollution victims of the Minamata tragedy by Hurdle and Reich has a great impact not only across Japan, but also the world.(161) Visual language can be especially powerful in performing this task. For example, technical data on the size of seal herds and codfish stocks instantly lost relevance when Brian Davies and other activists released photos to the media of baby seal pups being clubbed to death on the ice flows of Labrador.

It is not unusual, however, for these visual images to be streamlined so as to underline the central image. In August 1988, a New York Times' article on rain forest of destruction was accompanied by a stunning satellite photograph of the burning Amazon, which was created by Alberto Setzer of the Brazilian Institute of Space Research.

An environmental issue may be forced

into prominence when it is exemplified by particular incidents or events, for example, the Big Four Pollution Cases at Minamata, Niigata, Yokkaichi and Toyama.(162) Dramatic events like these are important because they assist the political identification of the nature of an issue, the situations out of which it rises, the causes and effect, the identity of the activities and the groups in the community which are involved with the issue.(163)

An event provokes pollution issue when it; (1) stimulates media attention; (2) involves some arm of the government; (3) demands governmental decision; (4) is not written off by the public as a freak, one time occurrence; and (5) relates to the personal interest of a significant number of citizens.(164) These criteria are partly a function of the incident itself, but also depend on the successful exploitation of the event by the community group.

In presenting claims, community group leaders engage in the process of "frame alignment," for example, the community group taps into and manipulate existing public concerns and perceptions in order to broaden their appeal.(165) In similar fashion, the industries in Tomakomai City attempt to appeal to wider public by linking new ways to solve the pollution problem, such as making drainage directly to the seashore and adding to the height of the industries' smoke stack. In Kita-Hiroshima City, the waste disposal facilities exhibit new technological programs that create interest in environmental issues and causes.

Commanding attention is not, however, sufficient to get a new issue on the agenda for public debate.(166) Rather, an emergent pollution problem must be legitimated in multiple arenas, such as the media, government, science and the public.

There are two ways of achieving legitimacy. The first way is by using the rhetorical tactic.(167) Best suggests that pollution rhetoric has become increasingly polarized. Ecofeminists, deep ecologist and other critics of post-industrial society have tended to adopt "rhetoric of rectitude" which justifies the consideration of environmental pollution on strictly moral grounds. This cleavage can be illustrated with reference to the Minamata tragedy that the loss of life and destruction of local fishing industry are morally wrong. By contrast, environmental pragmatists, who advocate various versions of the "sustainable development" paradigm, tend towards rhetoric of rationality. Recycling, for example, is based on the premise that environmentalism can be both socially useful and profitable. Pragmatists argue that pollution is serious problem and that natural resources are limited.

Second, a pollution claim can also be legitimated when the spokesman for the claim becomes a legitimate and authoritative source of information. Greenpeace has achieved this kind of sustained success as a claim maker. Greenpeace has achieved this success by acting as conduit for the dissemination of new scientific developments between the research community and the media and by becoming a "shorthand signifier" for everything environmental. In addition, Greenpeace's success is also due to its promotion of green lifestyles and environmentally conscious attitudes and its supplying knowledge and information which can be used strategically in debates in the public arena, (168).

Scientific findings and testimony by themselves are not always sufficient to push a pollution case past the breaking point of legitimacy. In the case of Minamata earlier complaints and

findings by Dr. Mazumi Harada, assistant professor at Kumamoto University Medical School[169], on the cause of Minamata Disease did not attract significant coverage or concern. It was only later when the issue became linked to claims that the pollution in Minamata were linked to birds, cats and human beings these claims were given wide attention and media legitimacy.

In contesting pollution claims, one can interpret environmental protection history from the position that the environmental movement has been far more successful in getting listed on the broad political agenda than in getting their policies institutionalized within this agenda.[170] Especially, such problems exist where these policies might require the reallocation of resources away from large-scale capital interests and national and local bureaucratic actors such as in Tomakomai City.

There are a number of factors, which can contribute to pollution issue in Tomakomai and Kita-Hiroshima being lost at the point of decision or action. Major external constraints such as the collapse of the Tokushoku Bank and the Yamaichi Security crisis may lead to a pollution issue being postponed and then altogether abandoned.[171] A pollution problem may be transformed into a less threatening political issue. Opponents within industries and government bureaucracies may use a number of tactics such as postponing discussion, referring an item back for further research or amendment which ensures that a pollution issue will not immediately be acted upon.

Invoking action on a pollution claim requires an ongoing contestation by claims makers seeking to affect legal and political change. While scientific support and media attention continue to constitute an important part of the claim package, the pollution issue is principally contested within the arena of politics. Contesting a pollution issue within the political policy stream is a fine art, given the cross pressures which legislators, bureaucracies and industries face.

Consider the variety of conflicting interests, which must be navigated by a community group in Kita-Hiroshima City as they conclude a pollution prevention agreement. If they are too ambitious about the content of agreement, the agreement may not be concluded. If they do too little, there will be no pollution prevention. In the Tomakomai City case, it seems that the community groups put stringent requirements in the content of the agreements. They do not compromise on pollution. As a consequence, they are not included in the agreements and the relationship between the community groups on one side and the industries and the municipality on the other side tends to become relatively distant. The municipality is placed in a difficult position, if they put in stringent requirements in the pollution prevention agreement with industries, the business lobby, especially pulp, paper, and automobile sectors, will strenuously object.

The municipality or regulatory agency should make reference to the motives, attitudes and capability of "typical" industries or business and regulated firms.[172] There are three different "images" of the business corporations.[173] First, business firms are pictured as amoral calculators. Motivated entirely by profit seeking, they carefully and competently assess opportunities and risk. They tend to disobey the law when the anticipated fine and the probability of being caught are small in relation to the profits to be gained through disobedience.[174] In this view, the regulatory

or municipal agency should emphasize aggressive inspection of all type of these industries or business and promptly impose severe legal penalties for any violation to avoid the industries be tempted to try to "get away with more." The goal is deterrence and strict policing. (175).

Second, the industries or business are pictured as a political citizen, ordinarily inclined to comply with the law, partly because of belief in rule of law and partly as a matter of long-term self- interest. Business managers have strong views as to proper public and business conduct. At least some law breaking comes from a principled disagreement with regulations or orders they regard as arbitrary or unreasonable.(176) The regulatory agency should be concerned with persuading the regulated industries of the rationality of the regulation in question, but it also should be willing to suspend enforcement, to compromise and to seek amendments to the regulation. As well, it should be responsive to the "citizen" complaints and be ready to adapt the law to legitimate industry problems created by strict enforcement.(177)

Third, the industries are seen as inclined to obey the law, but as potentially fallible or organizationally incompetent entities. Many violations of regulation are attributed to organizational failure. Corporate managers fail to oversee subordinates adequately, to calculate risks intelligently and to establish organizational mechanisms that keep all operatives a breast of and attentive to the growing dictates of the law.(178) In this scenario, the regulatory inspector should serve in large part as a consultant. His responsibility would be to analyze informational gaps and organizational weakness in the regulated industries and educate business concerning feasible technology system that would best assure compliance in the future.(179)

In this case the community group must skillfully guide their proposals through a logjam of vested and often conflicting political interest groups, each of which is capable of stalling or sinking the proposal. In addition, the successfully contesting of a pollution claim in the political area requires a unique blend of knowledge, timing and luck.

It is possible to identify six factors, which are necessary for the successful construction of pollution problem in Tomakomai and Kita-Hiroshima City. These are as follows:

First, the pollution problem must have scientific authority for and validation of its claims. Science may be an "unreliable friend" to the environmental movement.(180) It is virtually impossible for a pollution condition to be successfully transformed into a problem without a conforming body of data, which comes from the physical or life sciences.

Second, it is crucial to have one or more scientific "popularizers" who can transform what would otherwise remain a fascinating but esoteric piece of research into a proactive pollution claim. Whatever their background, these popularizers assume the role of a community group, reframing and packaging claims so that they appeal to editors, journalist, political leaders and other opinion makers.

Third, the prospective pollution problem must receive media attention in which the relevant claim is "framed" as both real and important. This has been the case for most of the well-known pollution problems of decade such as rain forest destruction, biodiversity and global warming.

Fourth, a potential pollution problem

must be dramatized in highly symbolic and visual terms. For example, Greenpeace and other environmental groups began to exhibit dramatic photographs of the "clear-cut" on Vancouver Island while labeling the area the "Brazil of the North". The image provides a kind of cognitive short cut by compressing a complex argument into one that is easily comprehensible and ethically stimulating.

Fifth, there must be visible economic incentives for taking action on a pollution problem. In the case of acid rain, there were a variety of economic interests groups, from the forest farmers and hunting associations of the Black Forest in Southern Germany to the maple syrup producers of New England and Eastern Canada, supported the claim by scientists and environmentalists that sulfur dioxide emissions from smelters and power plants were causing the forest to die. The case for acting boldly to stop biodiversity loss was levered on the argument that the tropical rainforest contained an untapped wealth of pharmaceuticals, which would disappear forever if nothing were done.

Finally, for a prospective pollution problem to be fully and successfully contested there should be an institutional sponsor who can ensure both legitimacy and continuity.

V. Conclusion

Japanese environmental law is now at a turning point. The first stage of environmental law was one, where prevention of human injures caused by pollution was the matter of most serious concern. The second stage was where quality of life was also an important factor for environmental protection consideration. Now Japan is in the third stage, where the comprehensive environmental management framework is formulated and implemented to facilitate the prevention of environmental pollution from the standpoint of nation wide and global environmental protection. However, low or zero economic growth may prevent enormous investment in pollution control. To attain a new type of consensus, public participation in pollution prevention formulation must be incorporated into the environmental legal system. These tasks are not easy to achieve, but in order to survive to the twenty first century the Japanese must find solutions.

The Fundamental Act for Environment includes the term "sustainable development," which expresses the goal of societal development without irreparable environmental destruction. This declaration goes along with the idea that future generations should inherit a comfortable environment. The use of this term should be seen as an expression of a basic change in national environmental policy. The focus has changed from a primary focus on economic and property rights to one that emphasizes the respect of human dignity.

There is no disputing the magnitude and gravity of the "environmental problem." Asian democracies like Indonesia appear to have not yet come to grips with the problem. There appears to be considerable public will to get involved, but also seemingly lacking is an appropriate administrative system. There is no obvious equivalent to administrative guidance to involve and to balance interests, as in Japan.

The Japanese model succeeds because it is in harmony with social values. Its genesis lay in a social moral, which prized consensus above all else. But its methodology may also be in harmony with some values, which are familiar to Indonesia and South East Asian, namely

participatory democracy and the use of agreement law to achieve a "meeting of minds." It is the social function of a civil agreement law, which serves Japanese cultural needs, such as their passion for harmonious relations that can also fit Indonesia's cultural needs, such as participatory democracy.

Thus, Indonesians see the absence of any implementation in the environment protection as being part of the problem. We have seen a successful example based on the devolution of real power to local government and to individual affected parties, all within an overall legislative framework or "safety net." Through the use of administrative guidance and the negotiation of particularized agreements between affected parties, there has been a process, visible to the public, which builds consensus and therefore earns legitimacy.

It is suggested that a similar process might be appropriate in Indonesia. It would be in harmony with its political traditions of participatory democracy and legal traditions of contract law. There appears to be, perhaps unusually, ample public will, indeed desire, to be part of the process. What seems to be lacking is the bridge between an overall legislative scheme and the current process of choice and local involvement. They seem to lack two aspects of the Japanese model. These aspects are a credible, respected bureaucracy and a creative administrative tool like administrative guidance. The latter unfortunately, would be unlikely to sit well with the current legal and administrative institutions, but at least the principles seem fairly clear, some of the traditions are already in place, and the ground is fertile for creative, localized, participatory solutions. Without such solutions it is hard to see governmental responses to environmental problem achieving legitimacy.

Perhaps in closing it should be asked why environmental issues, more than other pressing social and political issues, should be single out as deserving of special treatment. Any significant measure of public participation, for example, in approvals for new projects, will surely result in great deal of trouble, expense and especial delay. This problem may be justified by several considerations peculiar to the environmental debate.

First, unlike other issues, the public is at risk with environmental problems in a real, day to day sense. Not only are there significant concerns for the present quality of life affecting us all, but for the future generations as well. There is a stewardship role than can no longer be ignored. We are not only fouling our own environment, health, wealth, and diversity, but we may also be irrevocably despoiling it for our children.

Second, there is a real desire in the public, as discussed above, to be involved. To the extent that the desire is frustrated, specially affected groups and the public in general will not "buy in" to agreements. This is not only strains the social and political fabric, but at a more immediate and practical level it carries the risk of later problems.

Third, the decisions to be taken are, above all, social decisions. They may concern not just the question of how, for example, a major project should proceed, but if it should proceed at all. They are frequently not just technical decisions, but may be characterized as polycentric problems. Their solution should not be left to the narrow short-term focus of industries, community groups, governments or courts.

No doubt a significant public input would

result in some "irrational" decisions, which together with higher costs and long delays will cause some worthwhile projects to be scrapped. However, nobody claims that democratic values or a clean environment are without costs. The honoring of deeply held social values, in this case clearly expressed by the public, is a worthy prize to offset what is probably only a marginal derogation from our material standard of living. The process, and not the result in any particular case, is all important for the acceptability of a process and this acceptability is not simply a function of the number of correct or erroneous results.

Fourth, as pointed out earlier, we are dealing with "soft variables" which are frequently undervalued or ignored in quantitative analysis. Perhaps the surest way to value them accurately is to let the public, or at least those affected, value them in terms of what benefits they are willing to forego to protect them. However, unfortunately, there is a serious imbalance of power that can only be redress by mandating and facilitating meaningful public involvement. Interest groups must be tangibly represented as parties as in a contract model. It is not enough to require that decision be taken "in the public interest."

Finally, and perhaps most compellingly, the environmental problems may be genuinely "new" problems that call for new solutions. Their impacts are so widespread and potentially devastating that arguably the public cannot be excluded from their resolution. The issues are rarely broader than just "what is acceptable pollution?" Rather, it becomes "on this issue, what broad right does the public have to make decisions which affect their lives?"

Perhaps the only comparable issue is the threat of nuclear holocaust, whose peculiar characteristics enabled it to be sheltered and contained from public debate by political and military considerations. However, the environmental problem, with no less frightening implications, is different. It surrounds us and permeates our lives. Attempts to deal with it through the usual channels have been unsuccessful and have been seen to be unsuccessful. The process lacks legitimacy and credibility. Meaningful public participation, warts and all, may be the only way to make the process legitimate and achieve the goals. It seems to have worked in Japan.

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