
THE CITY OF KITAKYUSHU'S EXPERIENCE CONCERNING THE IMPLEMENTATION OF COUNTERMEASURES FOR AND COMPLIANCE WITH ENVIRONMENTAL PROTECTION LEGISLATION

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SUMMARY

To achieve environmental protection people must be conscious of the need for environmental protection and must take concrete actions in accordance with rules established for that purpose.

For example, in the developing nations experiencing continued economic growth, there are strict standards and rules, but this does not necessarily mean that environmental protection is being achieved. One of the biggest questions we are currently faced with is to what extent should we enact the measures which are available to us to protect the environment.

A severe pollution problem arose in the city of Kitakyushu in the 1960s, but through the partnership of the citizens and the parties responsible, the city was able to overcome this problem. The city is now actively involved in international cooperation related to the environment in an attempt to put the experience and technology that was gained in the process of dealing with pollution problems to work for developing countries which are suffering similar problems. Among our activities in this venue thus far, we conducted a review of pollution fighting experiences in conjunction with the World Bank in 1993.

The city of Kitakyushu's anti-pollution measures and its later international cooperation on environmental problems have been highly praised throughout the world, as is exemplified by their introduction in the Organization of European Cooperation and Development (OECD) report, the receipt of the UNEP Global 500 Award, and receipt of the United Nations' Regional Government Commendation at the Global Summit,

1 WHY WERE THE MEASURES OBEYED?

1.1 Problem awareness and the regional government

The first step towards solving environmental problems is raising awareness of the problem. To raise awareness it is necessary to have the information and educational tools for conducting an appropriate situational analysis.

In the city of Kitakyushu's response to its environmental problems, there was general rise in interest in such problems throughout Japan at that time and against that background, from the 1950s onward, many anti-pollution demonstrations were staged by citizens directly victimized by pollution. These citizen groups conducted their own research on the problems, made requests for improvements to the factories, and lobbied to legislative assemblies on a large scale.

In Japan at that time, a local autonomy system backed by the Constitution was already in place and local governmental leaders and representatives were chosen by direct vote by the people of the region. At the same time, the local government, as the branch of government closest to the people, was responsible for the welfare of the citizens, and while planning ways to

stimulate industry was also responsible for protecting the health of resident citizens. As a result, the local government was responsible for the comprehensive running of all aspects of the government and, thus, they were not forced to choose between either the environment or development.

Faced directly with the facts about pollution, first citizens, then assemblies and legislatures, and finally even corporations recognized very clearly the grave importance of the problems.

1.2 Incentives

Corporations, due to their responsibility as members of the local community, had no choice but to treat these problems very seriously. Also, within the corporate community, major corporations took the lead in actively looking for solutions to the pollution problems and other corporations followed their example.

There are several reasons why corporations took an active approach to looking for solutions to the pollution problems. One of these reasons was that there was unbiased guidance based on scientific proof, such as from wind tunnel experiments. Another reason was that the period in which these problems arose was one of rapid economic growth and the purchase of new equipment and capital investment was possible. Furthermore, the problems arose at precisely the time when new equipment and investment were needed anyway.

The pollution countermeasures actually improved economic effectiveness in some ways. Through improvements to production equipment, corporations were able to save resources and conserve energy and these benefits became economic incentives for implementing anti-pollution measures.

1.3 Crisis management

On the other hand, in some ways the corporate response was not as much an attempt to strengthen countermeasures for the purpose of achieving cost benefits as it was the implementation of crisis management countermeasures. They implemented countermeasures immediately because of the possibility that ignoring the problems could lead to greater damage later. A good example of this was the dredging of the mercury contaminated silt on the bottom of Dokai Bay.

Crisis management has existed in Japan in the form of afforestation and flood prevention works for a long time. These old practices, seen in the unified actions of the regional communities (including the corporations located therein) in dealing with the pollution phenomenon, brought about success.

1.4 Japanese culture

It is probably a unique aspect of Japanese culture, but the members of each regional society have an extremely strong aversion to shame. When a social action of a certain community is criticized, this provides a strong negative incentive to change. On the other hand, once an anti-pollution measure was authorized by a community, all of the community members tended to obey it.

2 WHY WAS IT POSSIBLE TO OBEY THE ANTI POLLUTION LEGISLATION?

2.1 Local automation and the constitution

The regional autonomy guaranteed by the Constitution can be given as a major piece of the framework that allowed for compliance with the pollution prevention rules. Pollution is actually a local problem and the active approach of the local governments, which are the administrators of each region, towards solving the problems was indispensable in eventually overcoming them.

2.2 Organizational adjustments

The city of Kitakyushu is a city of one million people which was born out of the merger of five cities in 1963. Each of the five cities acting independently would not necessarily have had the socioeconomic capacity to face these problems, but by combining into a single city they were able to create sufficient power to overcome the challenges posed by pollution.

The city of Kitakyushu started out with just one worker dedicated solely to pollution countermeasures, but the function gradually expanded over time becoming a group in 1963, a department in 1965, a division in 1970, and a bureau in 1971. The city's Environment Bureau was actually established five days ahead of the nation's Environment Agency. Adjustments to the organization of local governments in line with those of the federal government are indispensable for the success of large scale projects.

2.3 Regional leadership in pollution countermeasures

The federal government provided a basic framework for fighting pollution by establishing laws, etc., but the local governments, located closest to the people, played a major role as the driving force which carried out the everybody-work of implementing the countermeasures. In order to implement effective measures, the city of Kitakyushu was given the authority to establish regulations on pollution. As a result, the pollution countermeasures within the region were able to make progress in leaps and bounds. But, it was only possible for the city of Kitakyushu to receive such authority in the first place because the city had put together the capacity needed to enforce such regulations.

In the case of the city of Kitakyushu, in order to proceed with the anti-pollution measures in a comprehensive and well planned manner, the city first decided on an environmental pollution control program, and then, to implement detailed countermeasures, independently decided on local ordinances and an outline of essential points. This legislation set regulations which were stricter than those imposed by the federal government. The right of local governments to establish independent standards is also guaranteed by law in Japan.

In the city of Kitakyushu, individual workers acted on their own to gain a grasp of the actual situation and to understand the systems causing the pollution problems. They also conducted inspections of the corporations and gave instructions for making improvements. These activities were carried out in accordance with the law. These instructions were from the very outset not in terms of legal action, but rather were technical instructions for concrete actions to improve the situation against the background of the authority which had been granted to the city, and were both practical and effective.

The city workers assigned to do this work had specific knowledge of pollution problems, but their capabilities were further developed through their experiences out in the field and through being dispatched to organizations specializing in related technologies. The city earned the trust

of its residents by responding to complaints from citizens and reports of pollution related accidents immediately, and by implementing night patrols and other monitoring activities to compliment the strict regulations,

Among the various actions taken by the city of Kitakyushu, the agreement on environmental pollution control deserves special mention. The Agreement on Environmental Pollution Control was a voluntary agreement between the government and corporations which called for strict pollution control measures going beyond those set out in the legislation and which were not enforceable by law. But the corporations maintained strict compliance with the contents of the Agreement. The reasons why the corporations complied with this voluntary agreement are as I have outlined above.

Starting with the city of Kitakyushu, local governments throughout the country formed a network for exchanging information and sharing experiences. The work of the local government was also made easier by communicating local desires and requests to the federal government through this network. The local governments were also able to establish think tanks which included experienced scholars and members of the federal government by using this network.

In order to strengthen its scientific response to the pollution problem, the city of Kitakyushu established an environmental science research center and conducted scientific surveys and research on pollution.

3 CONCRETE MEASURES TO IMPROVE THE SITUATION

3.1 Regional authority

Regional authority was of tantamount importance in assuring improvement. The city of Kitakyushu was the first city in Japan to obtain the authority to issue smog warnings based on the air pollution prevention law. This authority made the reduction of pollutant emissions a sure thing because it gave the City the power to halt the operation of factories depending on the level of pollutants in the air.

The "special weather information system" which the city established independently as an early stage of forced improvement leadership, was based on observations of the environment, and was a system whereby the city made demands to corporations for preventive countermeasures prior to causing serious air pollution.

3.2 Conferences and partnerships

The city of Kitakyushu promoted the formation of links between experienced scholars and common citizens through the creation of the "anti-pollution measure deliberation council" and other groups to deliberate countermeasures to the pollution problem from an expert and broad-minded point of view.

The Kitakyushu Air Pollution Control Connecting Conference was made up of representatives from major corporations based in the city, the prefecture, and the entire country. The Conference's purpose was to provide a place for exchanging information and opinions on the practicality of legislation, for establishing mutual understanding in the way of thinking among corporations, and for the rough enforcement of preventive measures. The Conference played a major role in the implementation of pollution prevention measures by adding the participation of federal developmental agencies, clarifying the possibility for direct connections to the growth of individual companies, and establishing trusting relationships.

3.3 The agreement on environmental pollution control

The city of Kitakyushu decided on local ordinances which contained provisions much stricter than the national standards in order to confront the pollution problem. In addition, the city also decided on an outline of essential points which spelled out the city's policy in detail. These actions made possible effective and efficient countermeasures which matched the special characteristics and needs of the region.

With the implementation of the agreement on environmental pollution control (the voluntary rules decided upon by the government and corporations) the city was able to achieve compliance with standards stricter than the laws that were in place, could regulate items that were not legal regulations, and conducted pre-use inspections of new industrial equipment. The conclusion of the agreement also played a vital role in ensuring the creation of places for discussion and argument on the issues, such as the Conference mentioned above.

There was a federal program for providing financial assistance to the victims of pollution, but the city of Kitakyushu established its own independent financial assistance and rehabilitation system to help victims who did not meet the criteria for receiving aid from the federal program. This system showed the high priority which the local government assigned to the welfare of local residents, and along with the conclusion of the Prevention Agreement helped to win the trust of the region's citizens.

3.4 Education of personnel

In order to ensure a sufficient number of experts in the necessary fields of knowledge, the city hired persons with specialized knowledge and then made efforts to further develop these specialists into excellent workers with thorough experience in daily operations through on the job training programs.

3.5 Monitoring and leadership

Monitoring of the sources where pollution is created is the most basic step in pollution prevention. Production site inspections conducted by trained personnel without prior notification ensured corporate compliance with legal standards, and made it possible for the city to take a position of proper leadership against these problems.

The city also reacted immediately to complaints from citizens and reports of pollution related accidents with sincere efforts to solve the problems. Also, the city's pollution prevention stance was in line with the thinking of the people of the region and earned the understanding and trust of the city's residents through activities such as the carrying out of nighttime monitoring patrols.

3.6 Technological development and survey research

The local government did not simply force compliance with the legal standards in a one-sided manner, but rather made efforts in the field of scientific surveys and research, and was able to provide concrete technological information geared towards improvement of the pollution problems and was able to show the effectiveness of the measures being taken. Among these scientific endeavors, the independent improvement plans adopted by corporations based on wind tunnel experiments were not only effective as corporate countermeasures, but also helped the companies involved avoid undue financial burdens, and as such contributed to the development of trusting relations between the corporations and the local government.

The corporations did not merely adopt the production technologies and pollution prevention techniques which had been developed by outsiders as they were, they further developed the technologies into truly useful new techniques through efforts on their own part.

3.7 Economic incentives: cleaner production

After experiencing the oil shock, the cooperations made through efforts to conserve energy by introducing new production equipment, improving equipment maintenance methods, and by recycling. These measures also helped to reduce the volume of pollutant substances and waste products given off by the factories and made a great contribution to pollution prevention efforts.

The corporations developed futuristic new methods for consuming energy one after another. These new technologies included the OG method for utilizing energy which had previously been wasted, and the serial casting method for the casting of metal products.

The simultaneous achievement of both pollution prevention and industrial development is clearly shown by the following statistical fact. In times of industrial growth the amount of fuel consumed (source of pollution) generally increases, but following the oil shock, even though the amount of fuel consumed decreased, the amount (value) of industrial output continued to grow.

The amount of sulfuric oxide pollutants was reduced by 75% through the combination of energy conservation efforts and by switching to the use of alternative energy sources low in sulfuric oxide.

The switch from many small scale sources to the consolidation of equipment, while improving production efficiencies, also made a great contribution to the implementation of effective environmental countermeasures.

3.8 Public investment: improvement projects

In the area of environmental improvement, the local government and other public sector groups also carried out actual improvement projects. The construction of a public sewer system including a waste processing plant played a major role in alleviating the water pollution problems caused by untreated sewage.

The city of Kitakyushu conducted a dredging project to revitalize the Dokai Bay which had become so polluted that it was referred to as the 'sea of death'. The project of dredging and removing all of the bottom silt which contained more than 30 ppm of mercury was carried out based on scientific surveys and results analysis, with great care taken to prevent secondary pollution in the areas dredged. The costs of the dredging operation were borne fairly by the government and the public based on responsibility, with the corporations footing 70% of the bill.

4 THE POSSIBILITY OF TRANSFERRING THE CITY OF KITAKYUSHU'S EXPERIENCE TO DEVELOPING COUNTRIES

The experience which the city of Kitakyushu, and all of Japan gained through the process of overcoming pollution problems can provide many hints and ideas to developing countries but, since the economic social, and cultural conditions are different in each country and region, the specific policies and technologies used in Japan can not be applied directly to the situations currently faced by developing countries. The World Bank's report advises that when cooperating with the developing countries in environmental matters, the developed countries should support them not only in specific environmental activities, but also in the overall education of technological and managerial administration.

4.1 Economic, social, and cultural factors

On the point of economic growth and industrial strategy, the fact that Japan was able to conduct sufficient investment in pollution prevention technology was in large part due to the fact that Japan was able to achieve a high rate of economic growth, and also owed to the unique relationship between the government and industry whereby they worked together to find areas of agreement in laying out the country's economic policy'

The fact that the freedom of speech and the right to hold political discussions were guaranteed played a role in the success of dealing with pollution problems in Japan. Freedom of speech allowed for the upsurge of the grassroots anti-pollution movement, and the government and industries that received the message of this movement had no choice but to take measures to prevent pollution. Another factor was that Japan had achieved the highest level of education in the world by the 1950s and had a high level of literacy, and the people's consciousness of the pollution problem was heightened by a campaign against pollution by the mass media. Under these circumstances, private citizens and corporations realized that it would not be good to be singled out and criticized for anti-social behavior by the citizen groups.

The roles of the Central Government and regional public organizations were divided as follows. The Central Government created a broad legal framework and provided assistance, while the regional public organizations, who had to be sensitive to the feelings of the regional residents as their leaders were chosen by elections, took a position of leadership in the prevention of pollution.

The setting of prices as a part of the energy policy, the promotion of self-administration systems among corporations, and the introduction of large volume transportation systems were also effective steps taken in fighting pollution.

4.2 The applicability of Japan's experience to developing countries

The developing nations have a habit of prioritizing development over the environment but the first thing that needs to be done is for the governments and industries to develop the ability to evaluate the effects of their actions on the environment, and to strengthen monitoring capability.

The developing nations must also draw a sharp distinction between the things that were done in Japan that can be put into use immediately, those that can be used as a part of mid to long term planning, and those measures that will never be possible to introduce.

Actions that are highly feasible include the expansion and improvement of the ability of local governments to purpose and implement anti-pollution legislation, the development of environmental protection systems and organizations/personnel at the regional level, governmental assistance, the granting of legal authority, the conclusion of pollution prevention agreements with corporations, and the establishment of systems for resolving complaints from citizens, to name a few.

The existence of a system which allows for frank and cooperative discussion between the government and industries and improves the independent administrative ability of corporations through a pollution prevention management system is very important.

Review of the production processes themselves leads to the simultaneous achievement of economic growth and environmental protection. The raising of expert technicians and the development of pollution prevention industries and technology improvement consultants are all necessary as well.

Simple and inexpensive traditional technologies are often highly applicable as solutions to pollution problems. Also, it is necessary to give careful consideration to whether modern cutting-edge technology or traditional labor intensive methods are more appropriate for fighting pollution in each situation.

Making low-interest loans from the government available to corporations, the use of tax breaks, the strategic setting of energy prices, and the effective management of the overall tax system are all things that can be done to encourage corporations to take anti-pollution measures.

Education about the environment, the promotion of learning, the creation of systems to assist victims, and the monitoring of the sources of pollution are all important. Providing ways for citizens to participate in solving environmental problems is also extremely important.

5 INTERNATIONAL ENVIRONMENTAL COOPERATION

In order to put the experience of the city of Kitakyushu gained in the process of overcoming its pollution problems to use for the developing countries currently suffering under similar situations, the city is actively promoting International Environmental Conferences which bring together industry, government and scholastic institutions.

5.1 The taking in of trainees

Among the items on the international cooperation menu is the taking in of trainees from foreign countries. The city of Kitakyushu started taking in trainees in 1980 and has now trained more than 1,360 people. The city of Kitakyushu's training program is run in cooperation with Japan International Cooperation Agency and mainly consists of on-the-job-training, taking advantage of the wide range of corporations in the region. Over 200 firms are cooperating with the training program and many universities and governmental agencies are involved as well. As is to be expected, the local people welcome the trainees wholeheartedly.

The city is making an effort to follow up with the trainees who have completed their course and returned to their country by sending out a newsletter, *Environmetopia*, on a regular basis. The contents of the program are constantly being improved but a follow up survey is conducted every five years in an effort to maintain a good grasp of the needs in each country.

5.2 Dispatching experts

The City of Kitakyushu dispatches highly experienced experts overseas to provide technological guidance that meets local needs. To date, the city has dispatched more than thirty experts to twenty three countries.

5.3 International Conferences

The city of Kitakyushu has hosted many international conferences as a means of exchanging a wide range of experience and information. Since 1987, the City of Kitakyushu has hosted thirteen international environmental conferences with participants totaling over seven thousand people.

The city of Kitakyushu does not only dispatch individual experts, but is also conducting useful technological cooperation by going to foreign countries in the form of joint projects between industry, government, and scholastic institutions. In October 1993, the city sent a team of forty nine instructors and interpreters to the city of Dalian in China to conduct a technological seminar. Again, in January of 1996, the City sent a party of 36 people to Dalian with analytical equipment

and computer software to conduct an environmental exchange seminar. The seminar was not just “discussion” but also included many useful areas of cooperation such as high level training on how to use the analytical equipment, etceteras.

5.4 International cooperation implementation organization

The city of Kitakyushu is the home to KITA, a specialized organization which conducts international technological cooperation. KITA is a non-profit corporation established under the cooperation of the local young men's organization, industry and governmental agencies which carries out a wide variety of cooperative activities including the running of training programs.

Other programs the City is involved in include the “International Center for the Study of East Asian Development” which is run jointly with the university of Pennsylvania of the United States and does research looking at environmental problems from an economic point of view, the “Kitakyushu Forum on Asian Women” which does research on women's issues and the environment, “The Industrial Club of West Japan” which is a private sector group involved in international environmental cooperation through volunteer activities, and many other NGOs.

5.5 New steps in international cooperation

The city of Kitakyushu is providing support for the planning of the “Dalian Environmental Demonstration Zone.” This is a major project of the Chinese Government. The objective is to cooperate with environmental improvement activities in China, which is an important country for protecting the environment of the Earth. The aim of this plan is to designate a model city and conduct a concentrated and comprehensive environmental improvement project there, and then spread the experience and achievements of the project throughout the entire country. The idea for the Dalian Environmental Demonstration Zone was originally proposed to the Chinese Government by the city of Kitakyushu.

It was recently decided, based on the finalization of the master plan that ensures the efficient and effective implementation of the Dalian Environmental Demonstration Zone project, that the project would receive assistance in the form of ODA from Japan. The combination of cooperation from a local government which is very familiar with the everyday work associated with environmental improvement activities and the receipt of ODA brings hope and expectations for a more practical, new level of international environmental cooperation.