

Article

Japanese Approaches to Environmental Management: Structural and Institutional Features

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Generally, Japan has a cooperative and effective approach to environmental management, particularly in the period of industrial pollution control. It is characterized by power-sharing among administrative actors at the national level; relative decentralization within a system of vertical administration where leading roles are played by local governments; self-governance by business and a triangular model of actors. Furthermore, operational rules are decided upon in consensus-building negotiations, and environmental ethics are brought into consideration. All these features, particularly the features of Japanese approaches to industrial pollution control, originated from Japan's unique responses to the dilemma of promoting growth while protecting the environment. They are also rooted in Japan's political-economic structure, social norms and culture. The Japanese approach to environmental management has a relatively high level of effectiveness, although it is less efficient in some cases where consensus-building results in high transaction costs and proactive policy decisions are made.

Keywords: Japanese approaches, Environmental management, Structural features, Institutional features, Industrial pollution control.

1. Introduction

Japan achieved an “anti-pollution miracle” following its “economic miracle”. For this reason, Japan's experience in environmental management has become an area of considerable research interest in international academia. Particularly, the 1990s has been a period of intense academic and popular interest in the transferability of Japan's experience to Asian developing countries now facing similar environmental problems to those Japan experienced in the past. To date, almost all relevant research has been done by scholars from World Bank, OECD and developed nations including Japan. This article, in contrast, examines Japan's experience in environmental management from the perspective of an environmental administrator from China.

M. Janicke and H. Weidner argued that successful environmental protection is brought about by a complex interaction of influences and not by a single, isolated factor; a favorite instrument; a single type

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of actor or a particular framework condition or institution (Janicke and Weidner 1997, 4). Japan's success in industrial pollution control can be mainly attributed to such factors as changes in economic structure, increased energy efficiency and relatively effective environmental policies. These factors were described in a 1994 OECD report (OECD 1994, 95). Effective environmental policy formulation and enforcement depends not only on strict and well-designed policy instruments but also on the social capacities behind them. It would definitely not be possible to simply mechanically copy effective policies from Japan and expect them to work in other countries. To date, most of the literature has focused on particular policies and measures used in Japan; there has been much less discussion about Japanese approaches to environmental management. This is the motivation for this study of Japanese environmental management. It examines the issue from the institutional perspectives, including political-economic, social, and cultural factors. This is done in order to provide a better assessment of the reasons for Japan's success with environmental management and methodological implications for transferability.

From the institutional perspective, the context of four elements is important to assess environmental management systematically. They are administrative organizations, relationships between actors, day-to-day operational rules for organizations and actors, and informal environmental institutions. The four elements work together to produce social-capacity support for all environmental managerial activities. Without them, environmental policies and actions would not be effective in practice.

This article examines the features of Japanese environmental management—particularly the features in the period of industrial pollution control before the 1990s—and some changes in the 1990s and the reasons behind them, subjects that have received little academic attention to date.

2. Features of the Japanese approach to environmental management

Generally, Japan can be characterized by its cooperative and effective approach to environmental management, particularly in the period of industrial pollution control. The Japanese approach to environmental management features power-sharing among ministries and joint administrative responsibilities at the national level; a relatively high degree of decentralization of the vertical administrative structure that gives local governments leading roles in implementation; self-governance by business¹; a triangular model of actors² and the determination of operational rules through a negotiation process premised on consensus-building. Also critical are the environmental ethics found in Japan. While perhaps this is a little overstated, Japan takes a noteworthy approach to industrial pollution control in comparison with other Asian developing nations like China. Japan enjoys its relatively smooth implementation of policies based on its use of a command-and-control approach and pollution control agreements to protect the environment. There are relatively few cases where legal sanctions must be taken to deal with non-com-

1 Here, self-governance, as Margaret Levi explains by the phrase “quasi-voluntary compliance”, refers to the conscientious and active exercise of actions under external constraints such as governmental regulations and societal pressures, rather than the passive exercise of actions, which differs from voluntary actions.

2 Government, business and the public (including citizens, nongovernmental organizations (NGOs), the media, and public interest groups) each participate individually in environmental management according to their own social, political and economic functions and responsibilities. Nevertheless, relationships are formed between these three actors. This system of relationships is defined as the triangular model of actors.

pliance with environmental laws and regulations. Certainly the “anti-pollution miracle” in Japan is the best proof of the success of the Japanese approach to environmental management. However, this is not to ignore the fact that the Japanese approach has high transaction costs that result from the need for consensus-building.

2.1. Environmental administrative structures and operational rules

a. Power-sharing and joint administration at national level

i. The limited authority of the Environmental Agency of Japan, and power-sharing among ministries

The Environment Agency (EA) has the mandate to promote environmental protection with a view towards ensuring a healthy and civilized life for the people of Japan. The EA's general responsibilities include the planning, drafting and promotion of basic policies relating to environmental protection; overall coordination of the various branches of the State responsible for environmental protection; coordination of budgetary policies for pollution control-related expenditures and the centralized management of appropriations for environmental research and development. Both nature conservation and pollution control fall within its jurisdiction.

Although the EA has the primary mandate to protect the environment, several other ministries that were not originally designed to deal with environmental matters share the power of environmental administration with the EA. A large share of environmental activities is under the authority of these other ministries. In fact, the EA only took up 2.78 percent of the total national environmental budget from 1995 to 1997. The largest amount was shared by others, particularly by the Ministry of Construction; the Ministry of Agriculture, Forestry and Fishery; the Ministry of Health and Welfare; and the Ministry of Education³. The Ministry of Construction has contributed substantially to the development of Japan's environmental infrastructure. The Ministry of International Trade and Industry (MITI) and the EA are the most heavily involved in addressing Japan's industrial pollution problems. Although the EA has gradually assumed leadership in environmental management, its ability to carry out policy measures is clearly limited by the authority-sharing structure of the Japanese government and by its subordinate position in relation to other ministries.

ii. Negotiation and consensus-building in policymaking

The environmental policymaking structure is consistent with general industrial policymaking procedures in Japan. Negotiations among the administration, industrial groups and local authorities have been crucial to the development of Japan's national environmental policies. After the enactment of the Basic Environmental Law, the Central Environment Council (formerly known as the Central Pollution Control Council) has played an increasing role in environmental policymaking. This Council consists of representatives from academia, industry, and NGOs such as citizens' and worker' groups and some experienced persons who are retired from governmental departments. For important environmental matters, the Council offers policy proposals according to the requirements of Prime Minister or the Minister of

3 Calculated from the data in *White Book of Environment of Japan, 1995-1998*.

the EA, and the EA provides relevant preparation and cooperation in administration. The negotiation and consultation process then begins. For industrial pollution matters, the EA generally first consults MITI and then submits amended proposals to other authorities, such as the Ministries of Construction and Transportation, for further review. The EA also tries to propose measures that have or can gain the support of the public, local governments and mass media when it negotiates with others.

Following this review and amendment process, the EA submits its formal policy proposal to the regular Cabinet meeting of vice ministers from different ministries to formulate the draft bill. This meeting is actually another high-level process of negotiation and coordination in policymaking. Normally, almost all substantive work is completed during the meeting. Next, the draft bill is submitted to the formal Cabinet meeting, where it is finalized as a national policy, a cabinet ordinance or a legislation bill. Finally, the legislation bill is submitted to the Diet, where it is finalized as an environmental law. At this stage, consultations with the policy affairs committee of the Liberal Democratic Party (LDP, the ruling party) and other relevant committees are absolutely necessary.

Currently, the relevant meetings of the Central Environment Council are open to the public. At some stages of the policymaking process, the Council also holds public hearing meetings to explain the context of policy proposals and obtain comments from the public. These meetings provide a useful instrument for incorporating public opinion onto policymaking. The formation of the Basic Environmental Plan at the national level and the 21st Agenda of Kitakyushu at local level, for example, followed this kind of new public participation process.

iii. A two-sided coin: The advantages and shortcomings of Japan's approach to environmental management

Power-sharing structure. The power-sharing structure found in Japanese environmental administration has helped to foster consensus about goals and priorities and to encourage cooperation in meeting these goals by all ministries concerned. Thus, full use is made of the managerial resources of the national government. Environmental management involves so many aspects of the socioeconomic system that it is beyond the capacity of one or even a few organizations to address all of them. Particularly, the intense involvement of economic and public sector actors, such as MITI and the Ministry of Construction, in environmental management has promoted the incorporation of environmental considerations into industrial and general infrastructure developments (including industrial location, clean production, energy saving and other source control categories). The power-sharing structure has helped bring all governmental departments into participation and has fostered cooperation among them.

Nevertheless, all the advantages of the power-sharing structure can appear only after consensus among relevant ministries and other administrations is achieved. In practice, there has been significant conflict among the ministries and between environmental groups and industry in Japan. Before the 1970s, such conflict was so strong that some strict policy proposals failed. Even after that time, the Environmental Assessment Law could not be passed until 1997 because of industry opposition.

Hence, the coordination of the power-sharing structure and centralized structure of the national environmental administration essentially involves the balancing of the full use of managerial resources with the costs of coordinating different administrative sectors. The power-sharing structure has benefited

Japanese environmental management, but other countries should base their administrative structures on their own national conditions, thereby fully using their managerial capabilities and lowering their coordination costs. With this consideration of lowering coordination costs, Japanese government has decided to promote the EA to the ministry level in 2001.

Common ground. The environment is perceived as a common good. "Common good" implies that there is agreement on values, or common ground. Such common ground exists whenever parties blend their values through a social decision process (Loehman and Kilgour 1998, 5). Common ground is now a basic concept in environmental and resource management. This concept means that different parties share same or similar values on the matter in question and are willing to make their own efforts to reach common targets. Japan's negotiations in environmental policymaking involve the process of common-ground-seeking or consensus-building, and have been extremely effective both in forming a cooperative approach with the authorities concerned and in enforcing policies.

Open process of policymaking. In environmental decisionmaking, the Central Environment Council promotes scientific and democratic policymaking. While the academic members of the Council primarily review policy proposals and provide advice from the scientific viewpoint, representatives from industry, citizens' and worker's groups pay more attention to technological and economic feasibility questions, social acceptability and equity. Theoretically, such an open process of policymaking can promote social understanding, thereby releasing institutional tensions. At the same time, negotiations among ministries, industries and local governments help regulators and regulated parties formulate common perceptions.

Higher costs of coordination. There is also another side to the coin. Japan's model of environmental administration and policymaking usually results in higher costs in terms of the time required to coordinate and build consensus among parties holding different interests. Thus, although enforcement costs may be lower than in countries like China, where there is a centralized model with elite policymaking, it is often difficult for the Japanese government to take proactive measures in response to emerging environmental problems for which there is still only low social awareness. The delayed response of Japan to industrial pollution before the 1970s was partly due to the high costs incurred by the time taken to build consensus. In cases where there is still limited environmental awareness, Asian developing countries should learn how to take advantage of the positive aspects of both the consensus-building approach and the elite approach to environmental policymaking.

b. Relative decentralization of vertical administration

Relative decentralization of both authority and responsibility has been a key feature of Japan's environmental management at national level. Local governments are on the front line when it comes to dealing with specific environmental problems. Indeed, while formal mechanisms suggest that the national government must take the lead in the development of strategic policies, local governments historically have been in the vanguard of environmental policy reform in Japan. The success of Japan's pollution control strategy, therefore, rests heavily upon the competence and status of local government officials.

i. The leading roles played by local government in Japanese environmental management

Local government has led environmental management in three respects:

1. *Local governments have played pioneering roles both in the period when national government did not pay much attention to industrial pollution and in the period when urban and global environmental problems gained more attention.*

Rapid economic growth in the immediate post-war period was characterized by a general lack of concern about the environment. Local governments competed actively to attract industry, with little regard for the pollution that such industry caused. When fierce industrial pollution and serious damage to public health led to strong victims' protests, pressure was placed upon local governments to act. Some local governments began to take action, issuing local environmental ordinances and developing environmental facilities for industrial pollution control. After several years of such independent efforts, local governments gradually realized that they needed to make joint efforts and take unified action at the national level. To some extent, these local governmental actions spurred the national government's response to industrial pollution.

It is also noteworthy that local authorities are taking an increasingly proactive approach toward urban and global environmental matters. Kitakyushu City, for example, won the United Nations "Global 500" Award in 1989 and launched an Eco-city Program, which aims to create a harmonious urban model of environment and development based on a materials-recycling society. Some other local authorities in Japan are now actively attempting make integrated improvements in urban environmental quality and to cope with global warming.

2. *Local governments have launched environmental policies and measures.*

The pioneering experiences of local governments in both local policymaking and environmental technical research and development provided rich information to the national government for development of national environmental policies. Furthermore, even after national policies were established, local governments have taken the lead in preparing regional pollution control plans and introducing local effluent and emission standards that invariably were more stringent than those instituted at the national level.

Particularly, the Pollution Control Agreements (PCAs) inaugurated by local governments are a unique element of Japan's approach to environmental problems. PCAs were nationally popularized after 1964 when the first PCA was signed by the Yokohama City government and the Tokyo Electric Power Company. About 2,500 PCAs are concluded annually, and the number of valid agreements in effect increased from about 200 in 1971 to 37,000 twenty years later. It can be debated whether PCAs are actually voluntary. However, what is clear is that almost all enterprises do comply with the agreed-upon emissions levels. Because of the positive experiences Japan has had with PCAs and the international communities' call for deregulation, Japan's industrial circles are making efforts to launch voluntary actions in waste management and against global warming.

3. *Local governments have overall and direct responsibility for local environmental quality.*

In Japan, allocation of responsibilities for the environment between national and local governments follows the conventional pattern, in which the actual implementation of pollution control is entrusted to local governments. The Basic Environmental Law requires the establishment of environmental standards at the national level but recognizes existing practices, giving prefectural governors the authority to engage in a wide range of activities related to local pollution control policy and practice. In fact, historically, cities, towns and villages have always taken primary responsibility for basic environmental sanitation, and they continue to be responsible for sewage collection, treatment and disposal. With these traditional responsibilities, local governments were readily able to adapt their skills to cope with urban and industrial pollution. Prefectures and larger cities have assisted in addressing industrial pollution; have engaged in training activities on behalf of small and medium-sized cities, towns and villages and have developed national measures in the regions in which they are located.

ii. *The real forces driving local governments to play leading roles*

Local governmental attitudes toward pollution control tend to differ from those of the national government for several reasons:

- Distinct from the national government, local governments deal directly with anti-pollution measures, and must respond directly to victims' protests and citizens' complaints about environmental quality;
- Because local leaders are selected by the citizens, they are obliged to be aware of trends in public awareness toward pollution and
- Local authorities' environmental departments negotiate directly with local industry to set their own standards and successive goals. They are not, at the national level, subject to major influence from MITI.

iii. *The limited role of local governments*

The Local Government Law of Japan issued in 1947 stipulates that the local authorities can pass ordinances and other measures, but cannot in principle enforce rules and regulations stricter than those applied at the central level (Article 14) (Ueta 1993, 33). Local governments had only limited authority to address industrial pollution control before the middle of the 1970s. The birth of PCAs, an optional means that local governments could adopt to cope with local environmental problems at the time, was in part a result of these legal restrictions. Subsequently, debates emerged about the validity of local standards that were more stringent than the national ones. The Supreme Court (10 September 1975) settled the debate by ruling that when both a national law and a local ordinance control the same matters, the national law needs not necessarily prescribe a uniform nationwide standard. The judgement allowed public entities to impose different legal controls according to local conditions. In other words, different ordinances that impose more stringent controls than national laws do not necessarily infringe upon the law (Sugiyama and Imura 1999, 4). Since this time, the local governments of Japan have had much clearer legal authority in local environmental affairs.

The national government continues to exert significant influence on local governmental measures because it takes the initiative in national planning, industrial siting policies and major infrastructural improvement plans (such as traffic, energy and water resources). The national government also has the power to subsidize and issue bonds for local public works. The central government intervenes in the local administration by using subsidies as a means and by making instructions.

The national government also plays an important role in determining the effectiveness of local level operations. In addition to establishing the overall legislative and regulatory framework for all domestic policies, it provides financial assistance to local governments through its power to subsidize and issue bonds for environmental monitoring, research and development and local public works. It also helps small and medium-scale enterprises install pollution control facilities smoothly and assists in technology development. Assisting local governments financially has in practice been highly effective in furthering national policy. Local administration in Japan has for many years depended heavily upon a financing system in which the national government provides funds to compensate for local variations in revenue-raising ability.

Whereas local governments are capable of using their discretion to a fairly large extent in environmental matters, they are restricted to industrial and urban pollution control measures. As for large-scale works such as land reclamation, highways, railways, port and harbor construction and water resource development, all of which may threaten the natural environment, the national government is in control of the environmental management process. Local governments can play only limited roles in these areas.

2.2. Self-governance by business

a. Formal institution-building

In order to implement industrial pollution control measures, management systems in factories and business establishments have evolved in parallel with governmental administrative developments. Various special procedures have been introduced by the government, including notification systems for specified facilities, monitoring of factory operations, data keeping and reporting, responsibility systems and training and assignment of engineers to be in charge of pollution control. Of particular significance has been the system of pollution control managers.

The Law for Development of Pollution Control Organization for Special Factories issued in 1971 stipulates that specified factories have primary responsibility for their own pollution control programs, and must appoint pollution control supervisors and pollution control managers who have formal qualifications in pollution control. Pollution control managers are engineers in charge of the management and operation of specified facilities, data analysis and other technical matters. They are required by law to pass national examinations in order to acquire credentials. These examinations, which are controlled by MITI, cover high levels of technical and legislative expertise related to environment.

Today, over 65 percent of Japanese enterprises have a pollution control department. There are at present about 23,000 pollution control supervisors and 40,000 pollution control managers (Cruz et al. 1998, 25). They bear personal responsibility for in-plant control. In the case of serious or deliberate environmental

non-compliance, they may even be arrested under the law. Accordingly, they have a strong motivation to comply with discharge standards set by relevant laws or agreements. They are also motivated to perform in such a manner that maximizes benefits and minimizes costs to their factories, because they are themselves factory staff. They usually achieve this goal through close cooperation with process engineers. This situation facilitates the development and deployment of cleaner production technologies in industry.

Additionally Japanese enterprises have another in-plant managerial system that contributes to pollution control: the energy saving managers required by the Law of Energy Conservation. These energy-saving managers have legal responsibilities to increase energy efficiency and to conserve fuel, electricity, heat and any other energy source. The joint efforts made by pollution control managers and energy managers have resulted in an integration of source control measures with end-of-pipe abatement in industrial environmental management.

b. Informal institutional effects on environmental management practices of business

i. Corporate culture, environmental ethics and environmental performance

Because of the vigorous enforcement of environmental laws and the great pressure from society to deal with industrial pollution, the top leaders of Japanese corporations are often directly in charge of environmental affairs in their companies and have strong incentives to promote environmental management to help their companies establish good public images. The modern Japanese business structure actually originated from family-based companies. They feature a line-of-command or “do as ordered from the top” approach to management—a combination of the household concept with that of modern business management. This is a popular management style in corporate Japan. Japanese corporate culture is based on an ideology that portrays the company as a big family. Vertical loyal service, harmony, cooperation and hard work are expected. It is also common for companies to make lofty pronouncements stressing that business success must be honestly won with the best interests of society in mind. This kind of corporate culture has also been enforced by the general pattern of long-term employment for both workers and management in big companies and by the seniority system. Thus, when management so desires, environmental protection can be carried out effectively.

At the middle level of Japanese companies—the firm level—a technically skilled management force has played a major role in the actual introduction and operation of pollution control equipment and facilities. Engineers and technical consultants who are qualified in designing appropriate pollution control systems are available in Japan. Large-scale industrial enterprises have their own groups of engineers, and they design, introduce and operate pollution control equipment for the entire production process. Small and medium-sized enterprises hire the services of engineering consulting companies, which assist them in designing and operating appropriate pollution control equipment and facilities.

The joint-stock company is also a popular type of Japanese business; it is a common-interest entity where there is mutual stockholding among companies. Each large corporation owns a business network involving many small and medium-sized corporations in production connections. Companies tend to

keep very good partnership relations even though they often lack legal commercial contracts. As a result of this type of business network, the environmental behavior of large corporations can have far-reaching and strong implications for small and medium-sized firms.

The battle against air pollution and the win-win effects that have accrued when environmental protection has been achieved at the same time that business profits have grown have helped raise the environmental consciousness of businesses. International impacts have also played a role in encouraging businesses to move toward greater self-governance in environment management. Principally, the weaker the tension between individual cognition and formal requirements of laws, the more effectively laws can be carried out in practice. Nowadays most Japanese businesses are treating environmental affairs as necessary for promoting profits, and they are trying to establish new business philosophies that can help improve their enterprises' image or market shares based on their environmental performance. Increasingly, enterprises are now considering not only the efficiency of production, but also the durability of products, the ease of recycling, the absence of toxic substances and the presence of energy saving characteristics. Also, in the purchasing of materials, firms are starting to consider finding materials that have a low level of burden on the environment. As a result, the ISO 14000 environmental management series and voluntary approaches to environmental protection are now preferred by enterprises for improving their environmental performance and reducing CO₂ emissions.

ii. Business associations and environmental cooperation

Decisionmaking in the private sector with regard to industrial pollution, as with other strategic issues, takes place at two levels: the individual enterprise level and the industrial group level. The group is an association of enterprises that have certain interests in common, i.e., they may participate in the same trade at the national level or be located in the same geographical area. Such associations have been of considerable importance in bringing about the cooperation of industry in the attainment of environmental objectives. When in the early 1970s social and legal pressures forced Japanese industrial leaders to take action to improve the environment, industrial associations played a central role by agreeing on the environmental protection measures that their members should take. Because all member firms agreed to take the same kind of pollution control measures, the economic risk to any particular firm of taking costly measures was reduced. This arrangement, which continues even today, ensures that investment in pollution control affects firms' competitiveness more or less equally.

Associations, as representatives of industry, negotiate with national and local governments regarding policies that affect them, such as energy, regional development and pollution control measures. As a consequence, national and local policies are developed with a high degree of technical and economic feasibility. The associations are also used for training in the use of pollution control technology, exchange of experience, presentation of pollution control measures taken by local governments and discussion of regulations.

2.3. *The triangular model of actors in environmental management*

The major actors involved in environmental management are government, business and the public⁴. Their environmental interests may conflict, and they perform different social, political and economic functions and responsibilities. When they participate in environmental management according to their own functions and responsibilities, relationships form between these three actors. This is defined as the triangular model of actors. Theoretically, the government should act as a regulator and monitor; business as a self-governing and policy implementing body; and the public as a participant in environmental policymaking, by acting as a social supervisor as well as an actor protecting the environment through lifestyle changes. The three actors play complementary roles; if any one of the three is left out, environmental performance may be unsuccessful and cost-ineffective. In comparison, the two-actor model often existing in developing nations leaves out the public and usually generates a governmental-dominated approach, not a socially-driven approach (self-management by social forces) to environmental management.

There is debate as to whether or not a triangular model of actors exists in Japanese environmental management. Ryo Fujikura argues that local communities in Japan traditionally have played a very important role in resource management; however, Japan still is not a completely developed country in terms of the level of public participation in pollution control. Pollution control has been implemented mainly by governments and industries only after outside complaints from local peoples (Cruz et al. 1998, 27). This argument seems to be based on the fact that very few procedures for public participation were integrated into policymaking before the 1990s. It was not until 1993 that the first law fully integrating public participation into policymaking and other environmental activities—the Basic Environment Law—was introduced in Japan. Additionally, social capacity in terms of NGO membership is lower in Japan compared to that in European and American nations with more advanced mechanisms for public participation and effective NGO activity.

Nevertheless, from an environmental politics and historical perspective, the Japanese public has played a direct role in initiating national responses to industrial pollution. The public also promoted the introduction of actions to control industrial pollution. The public's role has been large when compared to other developing nations in Asia. The foundations for the triangular model of actors have long existed in Japanese environmental management.

First, the complaints of anti-pollution movements created by victims of pollution have been widely recognized as one of the critical forces behind stimulating national and local governmental responses to industrial pollution. These movements were strongly motivated by "Not In My Backyard" concerns.

Second, although the Japanese public has had limited direct participation in environmental policymaking and concrete activities in pollution control, the public does exert influence on the government through its participation in politics, particularly through votes and expression of social opinions. The public also can influence business because consumers can choose to purchase certain commodities over others. Busi-

4 The public, here, includes citizens, NGOs, media and any public interest groups.

nesses must respond by altering their market image. Thus, when the public cares about the living environment, companies respond by becoming greener. Such public influence on both the government and business are valid avenues for social supervision of environmental management. After the great improvements in environmental quality, the desire of the Japanese public to express its environmental concerns through political participation may not be stronger than before, but the rise in environmental awareness of the public has still had an effect on the government.

Third, citizens can fight for their causes through environmental dispute resolution mechanisms. This is actually one very important means of public participation in environmental management. In contrast to environmental taxes and charges—both market mechanisms that internalize diseconomies created by the polluter—the use of environmental interest dispute resolution mechanisms acts as a legal and social mechanism to compensate for the externalities created by polluters. One of the reasons why business in Japan heavily invested in pollution control is because the costs of pollution control were smaller than the costs of penalties and compensation to victims arising from violating environmental laws. Moreover, industry faced the possibility of a decline in sales due to their tarnished corporate image. This later aspect is quite closely related to citizen's actions and attitudes (World Bank 1994, 98). Jeffrey Broadbent also makes a similar conclusion from another perspective; he points to the unprecedented Japanese court decisions reached between 1971 and 1973 that awarded victory to the victims of Minamata and other major pollution cases. The judgements imposed stiff punishments and fines on the polluting industries, and this new legal treatment pressured more bureaucrats to enforce the new anti-pollution laws strictly (Broadbent 1998, 126). Even now, environmental dispute lawsuits often appear, cautioning polluters.

Fourth, citizen involvement in PCAs provides additional evidence to support the hypothesis that there is a triangular model of actors in Japanese environmental management. Some scholars note that in many recent cases, the public itself has participated in PCAs as an interested party together with local government authorities, and sometimes citizens' groups and companies have concluded agreements without the participation of local authorities (Sugiyama and Imura 1999, 3).

Finally, the triangular model of actors is gradually becoming more visible in some formal institutions. The Basic Environmental Law, for example, was the first law to fully integrate public participation in decisionmaking and implementation as a formal institution. Public participation is now one of the three basic concepts of the law. In fact, during the formation of the bill, the bill's contents were disclosed and modified to reflect public opinion. The same procedure was taken in developing the Basic Environment Plan of the central and local governments. This approach was quite innovative for Japan. The Environment Impact Assessment Law enacted in 1997 identifies public participation as a crucial element. It is expected that public participation will be further integrated into other policymaking processes. In addition to participating in social supervision, citizens are now also expected to participate more in environmental protection through domestic trash sorting and collection, domestic resource and energy conservation, green consumption and other activities aimed at changing lifestyles. No doubt such formal and informal institutional building is beneficial to solidifying the triangular model of actors, thereby improving Japan's approach to environmental management. However, the traditional norm of "Not In My Backyard" can still be a challenge for Japan as it attempts to cope with domestic pollution and global environmental issues.

3. Explaining Japanese approaches to industrial pollution control

Part 2 of this article examined the features of Japanese approaches to environmental management. This part will explain the reasons the approaches were created from the perspective of the evolution of Japanese environmental management. Generally, environmental management develops in a particular social, economic, political and cultural context. This context determines the national response to the dilemma of growth and environment (GE dilemma). The response, in turn, structures the national approaches to environmental management. Although some changes in Japanese environmental management have taken place after the enactment of the Basic Environment Law, the major features of Japanese approaches to environmental management—in particular the features in the period of industrial pollution control—originated from its unique responses to the GE dilemma. In environmental sociology, three structuralist hypotheses—material, institutional and cultural—attempt to explain national responses to GE dilemma.

3.1. Political-economic structure, social norms and cultural categories of Japan society: The origins of operational rules in environmental management

Political-economists tend to use game theory to explain social actions, and, in doing so, refer to the material interests and material means held by various groups. Many studies of Japan identify a “Ruling Triad” of dominant elites: the Liberal Democratic Party (LDP), the bureaucratic ministries, and the big business interest groups (Broadbent 1998, 23; Janicke and Weidner 1996, 85). The “ruling triad” model explains how power operates and is distributed. The three actors must basically work together to further their own and their common interests.

Social institutionalists, in contrast, hold that the home domain of politics, social movements, and other aspects of society, is shaped by institutionalized social roles and patterns, and the “rules of the game”. Social anthropologist Chie Nakane, for example, argues that all of Japan’s institutions, political and otherwise, conform to an institutionalized social pattern—an “inverted V” structure built of vertical norms of loyalty. These norms are not dependent upon beliefs, but upon acceptance of propriety—a set of proper ways of doing things (Nakane 1970, 102; Broadbent 1998, 26).

Culturalists claim that a society’s implicit categories, its dominant morality and values, shape the motives, perception and political choices of power-holders as well as of ordinary people, and thereby affect or determine a society’s macro-behavior. Many scholars have discerned distinct cultural values behind Japan’s economic and political performance, which is characterized by its internalized and implicit categories and values of deference and loyalty (Broadbent 1998, 27).

Rooted in these cultural categories and values, Japan’s Ruling Triad has operated under its own social institutions since the 1950s. This is still true in mainstream society even today. As Jeffrey Broadbent noted, the Ruling Triad uses embedded social networks imbued with “fellow-feeling” built on long-term contacts, work in the same agencies, and friendships and loyalties soaked in sake. He also describes a model of power for Japan that could be called a “business-dominated, LDP-mediated and partly pluralized, and at the margins, ministerial rationalized and more pluralized within a strong vertical corporatist”

political system (Broadbent 1998, 92, 97). The model holds that capital accumulation and regime maintenance are the two most important principles of the Ruling Triad. As a consequence, rapid economic growth in the immediate post-war period was characterized by a general lack of concern about the environment. In other words, the model also holds that Japan's national policymaking structure is more or less business-interest-oriented, based on negotiation and consensus-building and cooperative. These are the operational rules of environmental management. Once consensus is achieved, the social machine works smoothly and effectively, which is one of the main reasons why Japan's anti-pollution miracle came about after less than two decades. However, Japan's national policymaking style is a two-edged sword. The principle of capital accumulation and high transaction costs for consensus-building make Japan unable to take proactive measures to address industrial pollution. Instead, Japan has had to pay an expensive price for its pollution debacles.

3.2. *The whys and hows of Japanese responses to the GE dilemma: The origins of Japan's environmental administrative structures*

Whereas capital accumulation—a priority of the Ruling Triad in the past—led to the neglect of pollution caused by economic growth in Japan, the need for regime maintenance—another priority of the Ruling Triad—was the reason for the dramatic effectiveness of anti-pollution efforts before the 1980s. Hence, it is easy to understand why Japan's national governmental response to industrial pollution originated from the pressure of victims' protests and the pioneering efforts of local governments.

The peak of the pollution victims' protest wave marked a political turning point at the end of 1960s and the beginning of 1970s. As Figure 1 shows, environmental protests resulted in two profound effects on the LDP—the first member of Ruling Triad. The LDP suffered a decline in the popular vote from 58 percent in 1960 to 48 percent in the 1969 elections, but retained a comfortable majority of Diet seats. They had 63 percent of the seats in 1960 and 57 percent in 1967. However, given the lack of a comprehensive governmental response, the environmental movement turned to opposition parties for support.

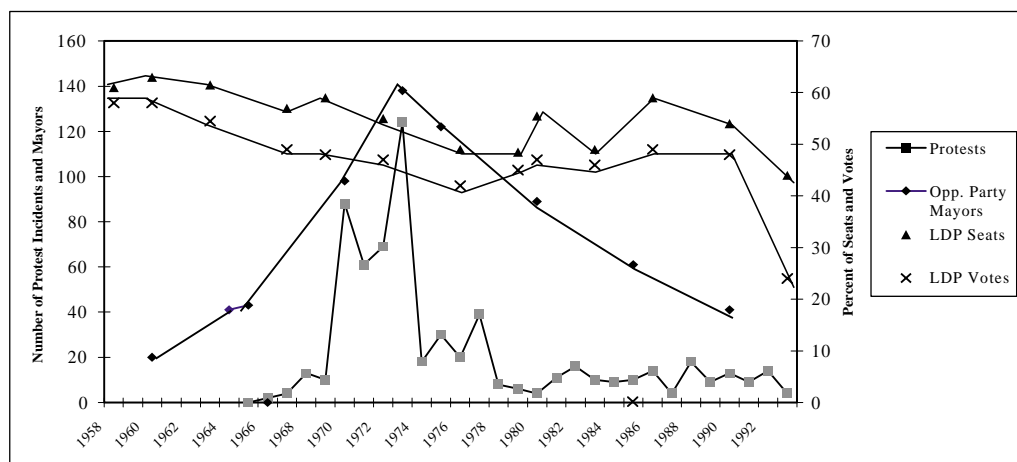


Figure 1. Environmental protest and political context, 1958-1993 (Broadbent 1998, 110).

Movements supported Socialist party candidates who promised to address pollution. With movement help, many Socialists were elected mayor and even governor. This led to a rising tide of opposition party mayors and governors. The number of progressive mayors increased from only 20 in 1947 to 138 in 1973 (out of 643). By 1970, progressive areas included Tokyo, Osaka, Kyoto, other big cities and over one-third (38 percent) of the entire Japanese population (Broadbent 1998, 111, 120). These progressive local politicians passed many innovative local pollution laws, and they also invented many new forms of grassroots political participation that gave greater voice to ordinary citizens.

The effects of environmental protest on business—the second powerful member of Ruling Triad—included the heavy judicial sanctions laid down in the four big pollution lawsuits. At that time, top business leaders feared that widespread environmental protests (such as labor protests) would disrupt productivity. In Mishima Numazu, protests had already stopped a large development program of the petrol chemical industry. “If the worsening environment and pollution illness are not attended to,” they thought, “further growth may become impossible” (Broadbent 1998, 123). In short, the disruptive potential of social protest loomed large in the minds of business leaders. This very real structural pressure was a crucial link in the political process.

As for the third member of the Ruling Triad, the bureaucracy, there were two main players: the Ministry of Health and Welfare (MHW), a pioneer in terms of promoting pollution control, and MITI, an industry representative giving top priority to growth. As early as 1953, the MHW conducted the first national survey of pollution and drafted a bill to protect the living environment. But the bill failed due to the opposition of the Ruling Triad. The Diet passed some anti-pollution laws in 1958 and 1962, but because they were quite weak and enforced by MITI, they had little effect. However, the MHW continued to pursue pollution control after this time, even though MITI opposed pollution control measures, particularly strict measures and the liability of polluters, until the late of 1960s. At the time, MITI ostensibly acted on behalf of business interests and government belief in growth. This is not to deny significant actions and cooperation provided by MITI in pollution control in the late of 1960s and its great contributions in the 1970s and at present.

Therefore, at the moment the Ruling Triad realized the emergency it faced and the need for regime maintenance, it initiated serious nationwide actions against industrial pollution; this was best symbolized by the “Pollution Diet” of 1970. Some argue that Japan’s delayed response to pollution was due to the more limited knowledge about pollution and its effects existing at the time, and the limited pressure from the international community. However, this is only half true. With regard to the state of pollution knowledge, epidemiological research and related research and findings on pollution had already started to become available in Japan in the 1960s, but social elites paid little attention to this information. With respect to pollution control technology, even before World War Two, there were already tall smokestacks, prototypes of flue-gas desulfurization facilities, and electric dust-entrapping devices in Japan (Committee on Japan’s Experience in the Battle against Air Pollution 1997, 29-30). However, on the international level, it is true that environmental issues only began to become heated issues after the U.N. Human and Environment Conference in 1972, two years after the “Pollution Diet” of Japan. Nevertheless, environmental issues were already prominent on the U.S. political agenda before the Pollution Diet and had a large influence on Japan.

The following points can be clearly drawn from the history of Japan's response to the GE dilemma:

First, Japan's response to industrial pollution followed a bottom-up approach. Japan's formal environmental institutions were built in accord with the real needs of social actors such as the ruling party, governments and business, as well as citizens. There were only relatively small tensions between regulators and regulated parties, which improved the effectiveness of environmental performance. However, Japan did have to pay high costs for its slow initial response to pollution. Although the national response originated from social pressure, consensus behind pollution control was achieved. This is one reason for supporting the formation of cooperative and effective environmental management mechanisms that are built upon the joint efforts of different governmental sectors, national and local governments, as well as businesses.

Second, political participation opportunities for citizens and other social interest groups are important for promoting and monitoring governmental responses to environmental issues.

Third, the MHW, MITI and other ministries have been deeply involved in the process of responding to the GE dilemma. Because of their rich experiences in both policymaking and abatement techniques, they are quite qualified for Japan's environmental administration. The power-sharing structure that can be found in Japan's national environment administration reflects the larger shape of the governing regime.

Fourth, independent from the national government, local governments need to respond directly to victims' protests and citizens' complaints about environmental quality. Because citizens elect local governors, local governments must take more active measures and embrace pioneering and leading roles in environmental affairs. This political and economic structure, which originates from the local autonomy system, shapes the relative decentralization found in Japan's vertical structure of environmental administration.

Finally, it is quite clear that national approaches to environmental management depend heavily on the context provided by political-economic structures, social norms and cultural values. Organizational frameworks, such as administrative structures, can be generally transferred with some modifications, but operational rules cannot be easily fit into other countries' frameworks. Nevertheless, the successful operational rules of one country can have theoretical and philosophic/strategic implications for other countries. For instance, strategic implications from Japanese experiences such as consensus-building, cooperative efforts by all administrative actors, the leading roles provided by local governments, self-governance by business and a triangular model of actors are relevant to the environmental management of other nations.

4. Conclusions

Compared to other Asian developing nations like China, Japanese approaches to environmental management feature an administrative structure at the national level that relies on power-sharing and joint efforts by ministries, a relatively decentralized vertical administrative structure that assigns leading roles to local governments, self-governance by business, a triangular model of actors, operational rules that derive from a consensus-oriented negotiation process, and a strong basis in environmental ethics.

All these features, particularly the features of Japanese approaches to industrial pollution control, originated from Japan's unique approach to the questions of why and how to respond to the dilemma of growth and environment. The management approach, furthermore, was rooted in Japan's political-economic structure, social norms and cultural context.

The power-sharing structure found in the environmental administration of Japan has helped spur ministries to make joint efforts in the formulation of policy once consensus on the need for action is achieved. This allows the national government to make full use of its managerial resources. The deep involvement of the economic and public sectors in environmental management has promoted the incorporation of environmental considerations into industrial and general infrastructure developments.

Decentralization of authority and responsibility and direct political participation by citizens have given local governments a leading role in environmental management.

The strict enforcement of environmental regulations and a unique corporate culture have led to an environmental management strategy by Japan's businesses that is characterized by self-governance.

The triangular model of actors involving government, business and the public has existed even in the early years of Japan's environmental management efforts. It has become more visible in formal institutions since the early 1990s. This has been extremely important in shifting a government-dominated approach towards a socially-driven approach in environmental management.

Japanese environmental management may be highly effective in general, but it does involve high transaction costs because of the importance accorded to negotiation and consensus-building, and tends to be less effective in terms of taking proactive measures.

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