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THE HISTORY OF JAPAN'S ENVIRONMENTAL POLICIES

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Japan's environmental history consists of two particularly significant features of industrialization. One of them being curtail environmental damages caused by rapid economic growth of the 1950s, and the other being the following success in controlling of industrial pollution and maintaining the economic growth in the 1960s. As a late industrializer Japan faced severe industrial pollution. Most profound problems consisted of country's high population density and the proximity of industrial areas to residential areas.

Ever since the 1960s Japan's attitude towards pollution control and environmental protection considerably changed. What previously were urban areas populated by people, became a new place for industrial complexes, which expanded the pollution problem. General perception by public was overwhelmingly negative, industrial pollution was harming people's health and basic environmental conditions, such as access to air. These problems were widely covered by media, and eventually lead to citizens' protests against pollution and weak environmental policies and protection by the government. These policies saw a change during the 1970s.

So serious were the problems that the government and industry were forced to respond to citizens' demands for change, and by the mid-1970s Japan had an extensive regulatory program for environmental protection in place. Economic, social and cultural factors unique to Japan influenced both the emergence of serious environmental problems and the later adoption of quite effective countermeasures. Japan has done much to improve its own air and water quality, to promote recycling and reduce energy intensity. Changes have been made to environmental laws, programs and management styles that put Japan among the ranks of the nations with the most advanced environmental programs. At the end of the 1960s, Japan was considered among the most polluted countries in the world. A decade later, it was beginning to achieve recognition for its environmental clean-up efforts. Today, in many areas, although certainly not all, Japan is an environmental technology and policy leader.

Majority of developing countries have substantial regulations, but realizing them is has not been very successful. China can be viewed as a good example of a country that introduced strict environmental policies and regulations, but in terms of realization, the government has not been very aggressive during implementation of said regulations.

Japan is an important case and there are several important points. Although Japan wasn't able to eliminate all of their pollution problems, their environmental situation improved remarkably in a relatively short period of time. Japan prioritized industrialization in terms of

economic development, which came with a high price to human health and the environment. The most egregious examples of this are the victims of Minamata mercury poisoning and itai-itai ("pain-pain" from Japanese) disease from cadmium poisoning. Victims of such diseases suffered from both terrible physical pain and neurological damages. Pregnant women were scared of diving birth.

As we can see, Japan's industrialization process came with severe environmental damages. According to the Committee of Japan's Experience in the Battle against Air Pollution, around 100,000 individuals were suffering from air pollution in 1998. The country had to compensate the people by paying out 100 billion yen annually to every victim of air pollution.

The country underwent economical losses due to damage control of the environmental situation. It led to large investments in expensive equipment used for pollution control, investments into environmental governance institutions were made as well, economically and environmentally efficient production processes.

As a result of these improvements, Japan has been labeled one of a small group of states that has ecologically modernized; this has been done through technological and policy innovations that have improved energy efficiency and controlled many classic pollutants.

Laws in environmental policy making

After the end of World War II, Japan focused more on economic growth and development than any other social aspect of the country. And these decisions led to the previously mentioned environmental issues. The government was very reluctant to take any measures to solve the environmental problems, and it was not until the summer of 1970s when Prime Minister unexpectedly set up the Central Anti-pollution Measures Headquarters. It was the first step in taking action to control the environmental damage. Another one of Japan's interests was to take steps in concert with the United States, which came up with the new policies a year earlier.

Many local areas with dense concentrations of industrial facilities suffered from serious pollution problems. No effective legislation or standards were in place to limit or control this pollution. With the adoption of new laws, greater legislative power was allocated locally. For example, local governments at the prefectural level were permitted to set and impose stricter emission standards on sources of pollutants than those set by the national government. Prior to this time, although local governments had introduced some standards, it was not clear whether they had legal authority to enforce them. The national environmental policy changes of 1970 clarified local government authority. Prefectural governments were officially allowed to impose stricter regulation on polluters with ordinances that were more restrictive than those at the national level. In practice, municipalities were also allowed to do so as long as their ordinances restricted polluters' activities in different manners than did national laws. A survey on PCAs conducted in 1999 found that it was not lack of power as much as lack of manpower and funds and the growing complexity of environmental problems that were regarded as the biggest difficulties faced by local governments.

There's a division between the roles of the national government and the roles applied by the local governments. The national government sets emission and ambient standards, which are implemented by the local governments. On one hand, emission standards set by the government are the national minimum standards.

Emissions standards are vague and are not supposed to impose excessive burden on the industries, because economical progress is government's main priority. So called burdens imposed by the emission standards are deemed to be excessive by several kinds of businesses, manufacturers and subsidies, such as loan prioritizations and tax benefits can be used to further develop the economy.

On the other hand, ambient standards are not attained in local areas and the national governments are often criticized by the local public and press for its negative effects. However, it frees the national government from legally requiring any kinds of action. Instead, it is local government's responsibility to hold the standards. Because the local governments are the most aware about area's local economic, social and environmental conditions.

Reducing plastic waste

Unlike European countries, in Japan, recycling policies and regulations did very little to discourage the use of plastic containers, plastic wrappers, plastic bags and other forms of plastic packaging. For example, in Germany, the recycling costs for plastic containers were about 20 times higher than recycling the same volume of glass. This effectively discouraged manufacturers from using plastic containers, which are very difficult to dispose. On the other hand, in Japan, the production and usage of plastic bottles and plastic packaging rapidly increased around the 1990s.

In expectation of the 'Law for the Promotion of Sorted Collection and Recycling of Containers and Packaging', the makers of PET bottles actually lifted the voluntary self-control on the manufacture and use of such bottles. This is a great weakness of the Japanese. The cause of this weakness is the priority placed on the recycler and not on source reduction.

By the "Law for the promotion of Sorted Collection and Recycling of Containers and Packaging" returnable glass bottles are supposed to be collected by the enterprise, but in actuality, they were not reused immediately after collection. For example, in Sapporo, the Municipal Government asked residents to sort PET bottles, specified transparent plastic bags, cans and glass bottles separately from "flammable waste", they were collected once or twice a week. But these rules and regulations were just a band aid on a big wound. For instance, the amount of collected and recycled PET bottles consisted only of 30% of entire supply of PET bottles. Therefore, these kinds of recycling regulations did not have any significant impact in reducing PET bottle waste. Furthermore, an imbalance in supply and demand in paper production and recycling business weakened and were on a steady decline.

Carbon Dioxin emissions

Japan is considered the most polluted by dioxins and such compounds. Local governments generated and incinerated amounts of dioxins are as high as 5 kg per year. An investigation and research were conducted to figure out which industries were the major sources of dioxins. A list of assumed fields was conducted: disposal of chlorinated organic compounds, hospitals and medical wastes, oil waste, as well as iron manufacturing. Often, the concentrations of dioxin in the air near these facilities have been as high as 0.6pgTEQ/m³ (pico-gram toxicity equivalency quantity/m³) in big metropolitan and residential areas, when compared with background areas (without artificial pollution) that have an average of 0.05 to 0.06pgTEQ/m³. Dioxins can affect the human body in a variety of ways, from acute toxicity to chronic toxicity, carcinogenic, and changes to the thyroid gland. It has recently been noticed that it can also induce reproductive toxicity. In the past, dioxin has usually entered the human body through the consumption of fish, particularly shellfish, so that it is especially alarming to learn that a baby can be infected with dioxin through its mother's milk. In fact, 51 pico-gram (pg.) fat concentration of dioxin was found in the milk of an Osaka mother, the highest concentration yet noted in a Japanese subject.

In spite of the fact that Japan is the country with the world's highest levels of airborne dioxins, the measures Japan has taken to control incinerator pollution lags far behind those of other countries. In June 1996, the Ministry of Health and Welfare did finally set a limit to the daily intake of dioxins considered harmless to human health: 10pgTEQ/Kg/day. At the same time,

the Ministry's revised 'Air Pollution Control Law Enforcement Ordinance' and the Waste Disposal Law Enforcement Ordinance set out to regulate standards for the emission of dioxins from incinerators. For a newly built incinerator, less than 0.1 to 5ng TEQ/Nm (nano gram toxicity equivalency quantity/normal m³), and in the case of an old incinerator, 1 to 10 ng, these levels to be achieved over a period of five years, or 80ng to be achieved over the period of a year.

The most fundamental measure necessary to reduce dioxin pollution must be a reduction in the amount of waste incinerated. During incineration, it will be necessary to completely prevent the production of dioxins, by means of the 3Ts (temperature, time, and turbulence). Although the mechanism by which dioxin is produced is in general understood, certain problems still need to be resolved.

Researchers need to learn more about the toxic effects of vinyl chloride, disposed electric appliances, waste wood, chlorinated fire retardants and antiseptics, products which include copper (which undergoes the catalysis of dioxin in a recomposite reaction), and salty waste foods. If plastic wastes were to be strictly sorted and perfectly collected, if all food waste were to be reduced to compost, and if cast-out home electrical appliances were to be strictly recycled according to the provisions of the Sorted Collection and Recycling of Containers and Packing Law, then there would be a huge reduction in the amount of waste that needs to be incinerated. In fact, Sweden and Germany have placed a temporary moratorium on the building of new incinerators, and for newly constructed incinerators they have set the strict standard of 0.1 ng emissions of dioxin: these steps, as well as reducing dioxin, have also succeeded in reducing waste.

Laws for Collection and Recycling of plastic containers and packages

There has been little need to conserve depleting resources or to reduce the pressure on the environment by plastic, because Japan gets many of its raw materials from aboard the sea and it has relatively lax waste disposal regulations. The overflowing of the landfill helped make little progress in the recycling and reduction.

Several factors have made it increasingly more necessary to consider and incorporate recycling practices into waste management policies. But Japan's laws, even in the late 1990s, fell short to the task at hand. At those times, practices of mass production, mass distribution, and mass consumption, customer attraction to use superfluous packaging, has led to rapidly increasing amounts of packaging waste, usually plastic. More than half of the domestic waste in Japan consisted of containers and packaging including, cans, PET bottles, polyethylene terephthalate, regular bottles and paper packaging. In April of 1997 the national government passed a law to promote recycling. However, this new law was immediately contested. Local governments including, Tokyo Metropolitan Government and 12 other cities called to reconsider the law because of its excessive burden that its provisions would place on every one of the local governments' finances.

Raising public awareness and other consumer initiatives

During the late 1990s and 2000s Japan was experimenting with different environmental management policies. One of the driving forces of environmental policy based on people power is the consumer movement. To achieve "sustainable consumption" instead of the producers, the role of the customers was heavily emphasized. A poll was conducted and the results showed a change in behavior and values of customers. For example, a great portion of consumers preferred environmental protection to simple convenience. According to said poll, majority of customers are ready to pay higher prices for more environmentally friendly products. There also have been some customers looks for new, more benign lifestyle, which includes energy saving, waste

reduction and recycling. Despite the positive results of the pull, it did not necessarily mean sudden changes in behavior of customers.

Living standards increased, and so did the environmental damage from it. In 1990s general population were beginning to recognize the consequences of their comfortable lifestyles. So many municipalities adopted a system of separate waste collection for households, which included paper, cans, bottles and plastic products.

Japan's industrial structure shifted toward service industries after the oil crisis in 1970s. Service industries do not require plants or factories, also does not require much energies and such resources. Instead, this industry uses resources and energy in an "indirect" way. It was recognized that costumers can affect the energy consumption by changing their lifestyles and using recycled products.

Modern times

Throughout the 1990s and 2000s Japan made considerable efforts in environmental management by introducing different policies and regulations. Saidefforts led to phenomenon named "pollution miracle". Nevertheless, both the media coverage and studies around Japan's environmental has policies and regulations greatly decreased.

Not all of Japan's pollution problems were resolved with the pollution miracle, however. In 1994, the Organization for Economic Cooperation and Development (OECD) pointed out a number of Japan's remaining air pollution issues, including nitrogen dioxide (NO₂), photochemical oxidants, fine particulates and hazardous substances (OECD, 1994). Particularly serious pollutants included NO₂ and suspended particulate matter (SPM) from vehicle exhaust. In contrast to sulfur dioxide pollution, which was largely resolved in the 1980s, the concentrations of these pollutants continued to fail environmental quality standards for urban areas. Health pollution victims in urban areas such as Tokyo and Osaka launched lawsuits demanding roadway closures and compensation for damages.

When reviewing Japanese environmental policies even after 1994, the OECD advised that Japan needed to reduce emissions of nitrous oxides (NO₂) and fine particulates.

Waste management issues also remained unsolved. As mentioned before, local governments were in charge of local waste management. Japan's 1816 municipalities nationwide were responsible for the handling of municipal waste. Out of 1816 municipalities, 17.2 percent of them, 313 municipalities, to be precise, did not have final disposal sites by 2007. Although the local municipalities have voiced their strong disagreement, Ministry of Environment's conducted a report in 2009 which depicts that around seventy-eight percent of municipal waste is incinerated, but 330 000 tons of incineration ash ends up buries in final disposal sites of other prefectures. Despite involving high costs, industrial waste management is very important and is part of businesses responsibilities.

Furthermore, illegal industrial waste dumping to avoid financial loses has become a nationwide concern.

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