

[Papers]

"Illegal Dumping of Industrial Waste in Japan: A Sociology of Law Perspective"

Azhar .....1-21

"Agriculture Sector Perspective: Climate Analysis and Agro-climate Zone Planning for Prospect of Farming System"

Haris Syahbuddin .....22-46

"Deflection of Linkage Barge"

Budi S. Prasodjo, Kimio Saito, Yasushi Higo and Hisashi Nobukawa .....47-56

"Sensor Phenomena Observed from a Plant of *Mimosa pudica*"

Hariyadi .....57-65

"Lattice Gas Automata Simulation for Polymer Gelation Process in Porous Media"

Muhammad Taufiq Fathaddin, Mariyamni Awang and Goh Meng Seng .....66-81

[Papers]

"Illegal Dumping of Industrial Waste in Japan: A Sociology of Law Perspective"

Azhar .....1-21

"Agriculture Sector Perspective: Climate Analysis and Agro-climate Zone Planning for Prospect of Farming System"

Haris Syahbuddin .....22-46

"Deflection of Linkage Barge"

Budi S. Prasodjo, Kimio Saito, Yasushi Higo and Hisashi Nobukawa .....47-56

"Sensor Phenomena Observed from a Plant of *Mimosa pudica*"

Hariyadi .....57-65

"Lattice Gas Automata Simulation for Polymer Gelation Process in Porous Media"

Muhammad Taufiq Fathaddin, Mariyamni Awang and Goh Meng Seng .....66-81

## Editorial Board

### Chief Editor :

Dr. Ratno Nuryadi *P3TM-BPPT, Indonesia & Shizuoka University, Japan*

### Advisory Committee :

Dr. Masatoshi Iguchi *Bogor Research Station, Indonesia*  
Prof. Yoshiki Mikami *Nagaoka University of Technology, Japan*  
Prof. Emer.Dr. Kazutoshi Yamada *Chiba Industry Advancement Center, Japan*  
Dr. Mulyanto *BATAN, Indonesia*  
Adi Junjungan Mustafa *Chiba University, Japan & BAKOSURTANAL, Indonesia*  
Rudi Lumanto *The University of Electro-Communications, Japan*

### Committee :

Dr. Agus Setiyono *FKH-IPB, Indonesia*  
Dr. Agus Fanar Syukri *P2SMTP-LIPI, Indonesia*  
Dr. Anto Tri Sugiarto *KIM-LIPI, Indonesia*  
Dr. Arief Budi Witarto *Bioteknologi-LIPI, Indonesia,*  
Dr. Budhy Kurniawan *FMIPA-UI, Indonesia*  
Dr. Eniya Listiani Dewi *P3TM-BPPT, Indonesia*  
Dr. Is Helianti *BPPT, Indonesia*  
Dr. Muhammad Budi Setiawan *BATAN, Indonesia*  
Dr. Nurul Taufiqu Rochman *Fisika-LIPI, Indonesia*  
Dr. Rifaid M. Nur *Pengelolaan Limbah Radioaktif, BATAN, Indonesia*  
Dr. Sri Harjanto *DTMM, FT-UI, Indonesia*  
Dr. Yopi *Biotek-LIPI, Indonesia*

## ISTECS JOURNAL, Vol. VII / 2005

---

Publisher : Institute for Science and Technology Studies (ISTECS)  
Jl. Kalibata Selatan No.51 Rt 01/03  
Jakarta 12740, Indonesia.  
Tel / Fax : +62-21-798-4133  
<http://www.istecs.org>, e-mail: [hq@istecs.org](mailto:hq@istecs.org)

---

## Illegal Dumping of Industrial Waste in Japan: A Sociology of Law Perspective\*

Azhar<sup>1,2</sup>

<sup>1</sup> Faculty of Law, Sriwijaya University, Jl Palembang-Prabumulih, Kabupaten Ogan Ilir, Indonesia

<sup>2</sup> JSPS Fellow, Graduate School of Law Hokkaido University, Kita 9 Jo Nishi 7 Chome, Kitaku, Sapporo 060-0809, Japan  
Email: aazhar\_2000@yahoo.com

---

### ABSTRACT

Recently, illegal dumping becomes one of the biggest social problems that raise significant concerns with regard to safety, property values, and quality of life of communities in Japan. This paper begins with the general overview of illegal dumping of industrial waste by surveying the definition of waste and illegal dumping. The second part presents state of illegal dumping. The findings showed an indication that the number of illegal dumping has increased. Experience elsewhere also suggest that the extent of the illegal dumping problems: the illegal dumping sites discovered, it will require urgent attention; and that cleaning up the illegal dumping sites will be very expensive, roughly twenty times the cost per unit of treating waste. Finally, we use sociology of law perspective to analyze the illegal dumping of industrial waste in Japan.

**Keywords:** illegal dumping, industrial waste, sociology of law perspective.

---

### 1. INTRODUCTION

Illegal dumping is a major social problem that raises significant concerns with safety, property values, and quality of life in Japanese communities. In addition, it is a major economic burden on local government, which is typically responsible for cleaning up dump sites.

Many of the illegal dumping sites remain present danger to the environment and to the people. There are many illegal dumping sites from Hokkaido to Kyushu area.

There are three well-known illegal dumping of industrial waste cases in Japan: at Teshima Island in the Seto Inland Sea, Kagawa Prefecture, at Tsubakibora district, Gifu Prefecture, another at the area along the border of Aomori and Iwate Prefecture[27][28].

The illegal dumping of a massive amount of waste in these places raised the issued of accountability: that is, who should be held responsible for the environmental pollution caused by the illegal dumping of waste and who should bear the cost?

---

## 2. DEFINITION OF WASTE AND ILLEGAL DUMPING

The Law Concerning Waste Management classifies the waste into two types: (1) domestic waste or general waste; and (2) industrial-waste [52].

General waste is the household garbage and night soil/domestic waste water. The household garbage consists of ordinary garbage and bulky waste. The ordinary garbage separated into four types of waste. The first type is recycle and reusable materials such as glasses, metals, pet bottles and papers. The second type is hazardous materials such as batteries, tires, refrigerators, televisions, gas tanks and other items containing mercury or cadmium. Third, landfill wastes are non-recyclable, non-hazardous wastes that are also non-combustible, such as broken ceramic items: construction debris, plastic, small electric appliances and rubbers. Fourth, incinerated wastes are non-recyclable, non-hazardous, combustible wastes such as soiled paper, kitchen waste, filmy plastics of mixed resin and unusable wood [13]. Industrial waste comprises 19 categories of waste as defined below (see the Chart 1). Our working definition of waste thus becomes waste is what we do not want or what we fail to use, with the proviso that "the failure to use" includes "failure to use for its proper purpose." Waste can be produced as the unwanted by product of a process, or something can become waste when it is no longer useful to the owner, or it is so used that it fails to fulfill its purpose[19].

In Japan the definition of illegal dumping is the same in the whole country that the industrial waste treated not complying with the standard for treatment of industrial waste or specially controlled industrial waste [52].

## 3. THE PRESENT STATE OF ILLEGAL DUMPING

According to the survey through prefectures and municipalities governments, cases of industrial waste treated not complying with the standards for treatment of industrial waste or specially controlled industrial waste, which are stipulated in the Waste Management and Public Cleansing Law (hereinafter is called WML, 2001) are increasing. The unsolved illegal dumping cases of April 1, 2003 were 2505 cases. The cases in which residual quantity of untreated was waste confirmed were 2285 and the total residual quantity was 10.96 million tons. Moreover, the unsolved illegal dumping cases as of December 28, 2004, was 2320 and the total residual quantity 12.67 million tons (Figure 1). If we compare to the total number of illegal dumping of waste, the increase is very significant in the last three years. For example in 2002 the total number of illegal waste dumping in Japan is 318,000 tons in volume and 934 cases, followed by 12.67 million tons in volumes, and 2320 cases in 2004 [34]. The data is not included the newest findings of illegal dumping uncovered in Tsubakibora, Gifu Prefecture [49].

Chart 1. Type of Industrial Wastes

General Industrial Waste	Industrial Waste under Special Control	
1.Cinder	Waste oil	
2.Sludge	Waste acid	
3.Waste oil	Waste alkali	
4.Waste acid	Infectious industrial waste	
5.Waste alkali	Specific Hazardous Industrial Waste	Waste PCBs
6.Waste plastics		PCB contaminated material
7.Rubber waste		Asbestos waste
8.Metal waste		Designated sewage sludge
9.Glass and ceramic waste		Slag, soot, cinder
10.Slag		Sludge, waste acid, waste alkali
11.Waste construction material (Pieces of concrete and other similar waste resulting from demolition of buildings and other structures)		Waste oil (Waste oil solution)
12.Soot (Soot gathered in the soot-collecting equipment at facilities designated in the Air Pollution Control Law as soot-producing facilities as well as at facilities that incinerate sludge, waste oil, and waste plastics)		
13.Paper waste (Paper waste from the pulp, paper, paper-processing, and paper-manufacturing industries; paper waste from the newspaper industry (including all printed matter published on newsprint); paper waste from the bookbinding industry and publications- processing industry; other paper waste dusted with PCB)	15.Textile waste (Textile waste from the textile industry (excluding the clothing and other textile products- manufacturing industries))	
14.Wood waste (Wood waste from lumber-manufacturing and wood products-manufacturing industry (including the furniture-manufacturing industry); wood waste from the construction industry (only wood waste from the demolition of buildings and other structures)	16.Plant and animal matter (Solid matter from plants and animals used as raw materials in the food-manufacturing, medical goods-manufacturing and perfume-manufacturing industries.	
	17.Animal excrement (Animal excrement from livestock and agricultural industries)	
	18.Animal corpses (Animal corpses from the livestock and agricultural industries)	
	19.Waste that results from disposal of the above mentioned industrial waste and does not fall under the above categories	

Source: Waste Management Law

In 2004, the total number of illegal waste dumping is 1,267,000 tons in volume and 2320 cases (Figure1)[35]. Among the 2320 cases detected, 41% were committed by those who generated the waste, 10% by non-licensed waste management operators, 6 % by licensed waste management operators, and 43% could not be attributed. Site remediation was carried out within the fiscal year in the majority of illegal dumping cases, mainly upon administrative order to disposers (those who actually did the illegal dumping). In a small number of cases, remediation was carried out by non-responsible parties such as landowners and local government [12]. Total cost for removal and

cleaning up the illegal dumping sites is estimated to be very expensive, roughly twenty times the cost per unit of treating waste [17].

Figure 1



Source: Minister of the Environment of Japan

#### 4. ILLEGAL DUMPING OF INDUSTRIAL WASTE IN JAPAN FROM A SOCIOLOGY OF LAW PERSPECTIVE

The Waste Management Law was originally passed in 1970 and was amended in 1991, 1993, 1995, 1997, 1999, 2000 and 2001. Although the following items were submitted by the Ministry of Health and Welfare Living Environment Council as necessary feature of the revision, their aims have remained unrealized [44]:

- (1). Producers/generators are responsible for waste that is difficult to dispose: afterward, such waste limited to four kinds;
- (2). Producers/generators must take responsibility if the waste is dumped illegally;
- (3). Resource recycling business should be subsidized; and
- (4). The term of the law must in accordance with the Basel Convention, which set limits for the trans-boundary transfer and disposal of hazardous waste.

The more difficult it becomes to find and construct a landfill sites, the more urgent have become requests by the public that the Waste Management Law should be revised [23]. The basic problem of industrial waste, could be described caught in "the wheel of illegal dumping" (Figure 2). Although it was desperately urgent to create new final landfill sites, it was increasingly difficult to find them. There are 2320 cases of illegal dumping in 2004 (Figure.1.), aggravates severe state of present day environmental pollution, while local residents are distrustful of and hostile against the construction of new landfill sites, even when these sites are authorized. During the past 10 years in Japan, more than 220 local disputes over the sitting of disposal facilities have been

registered officially. In October 1997, Professor Masami Taguchi of Risso University reported the results of his investigation into these cases and came up with the much greater number of 950 disputes [46]. In order to fulfill the ordinances to establish a landfill site, the local inhabitants have to agree but, owning their suspicion that the construction of the site will cause a deterioration of the environment, local residents have disputed the proposals (and generally rejected them), thus making it both more urgent and more difficult to construct final landfill sites [24]. The prospect of further construction of sites remains unclear. The Bar Association of Kanto District, however, disputed the opinion that the cause of illegal dumping was shortage of illegal dumping sites [5]. They insisted that these sites still has had considerable capacity for further occupation [5]. In their view, the situation where it is was being dumped illegally in order to cut down on the cost of the "treatment fee." An investigation carried out by the National Policy Agency's Bureau for Safer Living claims that 65% of criminal instances of illegal dumping of industrial waste are motivated by the need to reduce costs [5]. The problem argued is money: waste disposal enterprises seek to increase profits by reducing cost by applying the principle "saving in application of constant capital."

**Figure 2. The Wheel of Illegal Dumping.**



In the following, we try to discuss about Not in My Back Yard or NIMBY itself and then followed by analyzing with asking series of questions such as is NIMBY exist or is there residents opposition against industrial waste in Japan? And how much the impact of NIMBY toward the construction of landfill site and illegal dumping problem? Finally, we try to find out what strategies Japan are using and going to use for the future. Let us see what is NIMBY? NIMBY phenomena has been well documented both in the academic literature and in the popular press, communities can often delay or force cancellation of proposed industrial waste facilities.

---

was chipped in stone. There were no alternatives. We weren't fighting a waste disposal site. "We were fighting for our democratic rights [1]." The roots of NIMBY, Matheny and William argue, "are in the failure of meaningful public participation [29]." As Audrey Armour notes similarly, it results from failure to acknowledge the legitimacy of concerns and opposition [2].

Second, another part of the opposition that emerges clearly stems from concerns about potential health and environmental problems arising especially from industrial waste disposal facilities. They represent what might be called the "dread" factor [11]. These concerns and fears are now widespread among the residents and are more than evident in much of the non-academic literature on industrial waste problems, and in some academic studies [6]. They need no elaboration here. It should suffice to note, in the words as one of firsthand observer of a sitting controversy, that the fear was founded "was deep and it was complex and it was certainly far more entrenched than simple hysteria" [2]. While some experts argue that the perceived health risks are often greater than the actual risk, the fact is that the actual risks remain largely unknown, and perhaps unknowable. Toxicological studies do and can provide definitive answers to questions about long-term risks from contaminants such a dioxin. Based on report of World Health Organization, the U.S. Environmental Protection Agency and German scientists that dioxin causes cancer in humans. It is nonetheless arguably the case that the perceived risks of industrial waste treatment facilities are relatively to those of such widely accepted industrial neighbors as chemical plants and oil refineries [43].

Third, the NIMBY phenomenon is concerns about fairness and inequality. Many analysts agree about the risk [39]. We can conclude that the questions asked are common enough in research area such as in Takasu Town, Kita-Hiroshima City as well as Wakkanai City. Why should a facility be located here, rather than somewhere else? Why should we have to bear the cost of it? Why not, well, someone else? The cost that implied in such as questions is both economic and social in nature, such as loss of property value and a negative community image.

Our analysis in this study is that all three of these types of concerns are important sources and components of the NIMBY phenomenon. All of them need to be addressed if agreement is to be reached on the sitting waste facilities. In particular, opposition to waste facility sitting has to be recognized as a political and social response, and a legitimate one, not seen as blind ignorance about technical matters.

NIMBY is natural, rational reaction to a possible threat argue, have force a more serious examination of inadequate facility plans, have prevented some industrial waste facilities unsafe projects, and have forced a more thoughtful search for alternatives such

---

as waste reduction, reuse and recycle measure [25].

NIMBY movements have also, arguably, in some cases, saved taxpayers millions of dollars that might have been spent on ill-conceived industrial waste facilities in the long run, for example, the Teshima Island, Gifu and Aomori and Iwate case [27][28][49]. It also cost them more modest sum in ultimately failed industrial waste siting processes in the short run. One such case involves the elaborate and expensive plan developed in the middle of 1990s to provide a large integrated waste treatment and disposal facilities in Wakkanai, Hokkaido. After much opposition and long delays, the Hokkaido government decided at the end 1998 to scrap the plans developed by the waste company based in Sapporo [5].

The government concluded that "much had change since the waste company has started its hunt for a plant site," and there was great doubt whether such a stand-alone waste facility was best option, as opposed to waste reduction and treatment on site. As one environmental advocate has observed, "The problem is not NIMBY." Whether such groups are on balance, forces for good or evil, "the problem is finding safe and effective means of waste management" [37].

It might easily be assumed that NIMBY is not a Japanese phenomenon. According to a well known analysis of American industrial waste policies, Japan "has successfully sited numerous industrial wastes treatment facilities tailored to specific industries." The explanation, Daniel Mazmanian and David Morell suggested in passing, may lie in the high level of cooperations [30]. A major comparative study of environmental policies seems to support the prediction that opposition to industrial waste facilities should be less evident in Japan, though it offers a somewhat different explanation. The politics of pollution, Cynthia Enloe argues, depends "not only on the public's level of concern but also on its willingness to press demands" [9]. She contrasted Japan with the United States in both regards. Implicit NIMBY attitudes in the United States. Kent Portney concludes that American Political and social culture [39]. Such an argument could be taken to mean that opposition to industrial waste problem is particularly, American, and thus to imply that other cultures may not manifest the same rebelliousness. It might then well be assumed that NYMBY, like subway graffiti, is foreign to Japan.

While certain truths and myths about Japan would suggest NIMBY is not or should not be a common phenomenon, local opposition to facility siting exists and in fact, thrives [18].

The next question should be asked is NIMBY exist in Japan? Japan has changed in recent decades. To some extent, the image of a passive and obedient people is an out dated view of Japan. The analysis simply will miss some fundamental facts, if only

focused on the national level. To conclude that NIMBY is not exist in Japan might be tempting but would be wrong. It is, in fact, very much in evidence and has been for some time.

One of the most prominent manifestations is a number of community's groups that have arisen in research area since the industrial waste companies submitted the proposal to develop industrial waste facility such at Hibarigaokareien, Takasu Town. Since that there are three community's groups has been established to opposed the project such "*sangyou haikibutsu kensetsu hantai kiseikai*" (Industrial Waste Resistance toward Realization of the Project), "*takasu chou ikensyou atsumaru sennin no kai*" (Takasu Town One Thousand Collection of Petition) and "*sampai mondai kyougikai*" (Industrial Waste Problems Council). On May 6, 1999 the community's groups have collected 6364 petition of 7253 Takasu Town population. The groups strongly tend to be locally based and confine their activities to the local level, rather than act at the national level. It has been suggested that Japan is unique in the sense that community groups in most countries are strong at national level, while in Japan they are strong at the local level [36].

All of the community's groups originally emerged to seek and oppose the industrial waste facility project and threats. Both the protests and the groups themselves were fostered by dramatic changes in mass attitudes at the same times.

The residents' movements had a strong and profound impact. They were, in the words of two sympathetic observers, "vehemently active" demonstrably effective in blocking industrial waste facility projects if appropriate pollution prevention measures were not being taken such as in Futatsuzuka waste dump case [54]. Thus, "nearly all industrial waste facilities projects, large and small, face local resistance," according to a respected activist [51]. Beyond their local communities, these grassroots organizations influenced public opinion, which, in turn, influenced national and local governmental agencies. Collectively, the movements significantly disrupted the traditionally tranquil state of Japanese politics. They represented "the replacement of polite consensus politics by open confrontation," and indeed, nothing less than "Japan's cultural revolution" [32]. The following examples may be useful to illustrate both the roots and the existence of NIMBY in research area.

In 1997, local residents in Wakkanai, Northern part of Hokkaido Prefecture, opposed the construction of a Landfill. They were eventually successful. This case has often been hailed as "the first major domestic challenge to the nation's postwar economic policies" and as Hokkaido successful landfill siting protest [16]. About the same time, the Kyokusei Clean Ltd., industrial waste company based in Asahikawa City

proposed to build an industrial waste landfill in Takasu, near Asahikawa, center part of Hokkaido Prefecture in 1998. Citizens in both areas, especially the local farmers, protested against the project, and eventually triumphed. The company abandoned the plan in July 31<sup>st</sup> 2000. It was the second landfill plant in Hokkaido was canceled by local opposition. A proposal to make a new nuclear electric power plant number 3 in Tomari Village met with strong local protests after it was discovered to have leaked radiation on its waste treatment in August 2000. Another movement arose by the community group to press for development of nuclear power plant number 3 in Tomari Village. Community groups, environmentalist and fishing worry about the effect of the nuclear plant.

Other cases might be cited, but the point should be clear. Impact of postwar industrialization in Japan, coupled with the proximity of industrial waste sources to industrial waste facilities site, agriculture, and fishing, led to some of the worst industrial waste problems conditions to be found anywhere in Japan. There are often intolerable conditions, in turn, fostered protests and direct action [22]. As one participant, an elderly fisherman, put it: "We used to just put up with it and cry ourselves to sleep (*nakineiri suru*), but this time it affected our economic circumstances and our health, so we just had to rise up and protest against it"[33].

The local community's groups opposition is reinforced by two tendencies. Resistance activities tend to perceive the causes of industrial waste problems less in the high consumption levels of an industrial society than in neglect or malicious intent, in the attitudes and actions of industry, industrial waste firm and local government. They regard industrial waste problems as "something evil that polluters (*kagaisha*) did to victims (*higaisha*)"[32]. Accordingly, issues are defined in health related, geographically limited, usually local, terms.

Second, they also tend to restrict membership in these groups to person directly affected by the industrial waste facilities and not to avoid forming active alliances with "outside" groups in the same prefecture such as Hokkaido Waste Problems Network. These groups tended to place great importance on "local residence" and "intimate involvement," believing that only the victims or potential victims in particular dispute belonged in a citizen's movement [31]. What are weakness with respect to building strong national coalitions are strengths with respect to building a strong local organization and gaining influence in local decision making.

It would be easy to exaggerate the success community groups in blocking industrial waste projects in Wakkanai City and Takasu Town. Some protests have been failures such as industrial waste facilities in Kushiro. The protesters have not gone beyond peaceful means and provoked forcibly seizing land, for example, in the well-known

Futatsuzuka waste -dump case in Hinode, Western Tokyo. The opposition to the industrial waste projects has not always proven intractable. In some cases, it has ultimately been worn down and defeated. The time required to gain siting approval, however, has gotten longer, even rejected and withdrawal. The Kita-Hiroshima industrial waste plants in Hokkaido, which took an average of six months to site in 1980s. But, more than thirty six months by the late 1990s for Kushiro industrial waste facilities [26]. The industrial waste firms, which proposed the industrial waste facility projects in Wakkanai City and Takasu Town withdraw their submission.

Residents' group have opposed not only potential environmental damages from planned industrial waste facilities projects but also the projects themselves in long term and the industrial waste facilities activities that come with them. In the process, these groups have come to wield considerable influence on municipal and prefectural policies in general and on industry. Their muscle has been shown just through pressure and petitions. They have forced petition, as in Takasu Town, where a proposed industrial waste facilities was defeated on July 31, 2000. They have brought about the recall of local politicians who took positions opposed by the groups, as in Kita-Hiroshima and Sapporo City. They have driven pro-industry candidates away or run their own candidates.

A major factor underlying this influence is what Bradley Richardson [41] terms "localism." Japanese tend to be more, not less, interested in local politics than in national politics and more inclined toward "collective participation" in "the social world of the small community" than in national politics. "Japanese politics," he adds, "is above all a politic of local connections" [41].

The impact and importance of the citizens' movement has been bolstered by the important role of local governments that play in industrial waste problems. Although prefectural and municipal governments have only limited autonomy in Japan, especially in terms of governmental finance, they can have substantial clout on industrial waste proper treatment policy. For one thing, they have responsibility for negotiating and implementing industrial waste regulations. Unlike many other controversies in postwar Japan, industrial waste became a political issue in specific localities long before it was viewed as a national problem [31]. Local authorities can establish high or more stringent standards on the industrial waste treatment and management than those set by the national government, and many prefectures have done so. For example, Hokkaido Prefecture during the late 1990s, has adopted one of the most stringent industrial waste policy in the country. Local activism has thus been source of increased industrial waste regulation at the local level.

---

Another manifestation on the potency of local environmental politics, and thus of the role of local residents movements, is the growing use of pollution prevention agreements (*Kogai Bashi Kyotei*). These are formal, written accords (or contract) negotiated and signed usually by corporations, community' groups and municipals or prefecture governments [15]. Many of these agreements directly involve non-governmental groups as signatories [53]. Kita-Hiroshima City has been carried out pollution prevention agreement with industrial waste since 1979 with 8 pollution prevention agreements. These agreements are entirely voluntary. Local governments often can put pressure to industrial waste companies to accept provisions. They are increasingly able to do so because of resident pressure [54]. "Government pressure is effective," Yamanouchi and Otsubo observe, "because of residents support against inappropriate handling of industrial waste"[54].

One analyst went so far as to say that "environmentalism in Japan had largely vanished from the political scene" [55]. It did not disappear at the local level. On the contrary, Hokkaido residents movement against industrial waste facilities just started since in the late of 1990s such as in Wakkanai, Kushiro, Kita-Hiroshima and Takasu. The movement in Hokkaido achieved spectacular successes such as Wakkanai and Takasu case. Some of residents' movements were still active. NIMBY has not died out in Japan.

Sapporo, for example, currently finds itself caught by different NIMBY movements, one at home, and others elsewhere. Only about half of the city's industrial waste is treated and disposed of within the Sapporo area. The rest transported into neighboring and other areas for disposal in landfills. Opposition from residents has dead locked plans for a new site [4]. Even new technology demonstration project promoted by the Clean Japan Center, a national recycling promotion agency, have not been immune from the NIMBY syndrome. Some have been opposed by citizens' groups and local politicians simply because they deal with "waste," whether or not these wastes are hazardous in nature. Siting facilities that deal with industrial wastes remain doubly difficult, and the root cause is clear. In the words of one expert, industrial waste has an "extra, extra bad image" [47]. Another question, what is the impact of NIMBY? First, the impact of opposition had led to cancel the construction of industrial waste plan which cause to growing shortage of available sites for treatment and disposal of industrial wastes in Japan such as in Wakkanai City and Takasu Town.

Other consequence is rising opposition and conflict over "exports" to other jurisdictions, escalating prices for treatment and disposal, and increasing improper and illegal dumping of wastes.

---

By the late 1990s, public opposition in research area had made it almost impossible to open new industrial waste sites in Hokkaido area, as it had in other prefecture in Japan [16]. Expansion of disposal sites has not kept pace with industrial output, even with substantial gains in the recycling of industrial materials. Although land is at a premium and, until recently, the country lack of a national policy framework, the real problems have been almost entirely local and political in nature. Faced with stiff public opposition, local governments in Hokkaido have become very reluctant either to issue a permit for new facilities or to accept expansion of existing facilities. Local politicians do not need to see protestors in the streets on such questions. They know well that protests will arise if any such plans are contemplated. Industrial waste facilities have not been established, notes in Takasu Town and Wakkanai area, because "the understanding of the industrial waste companies responsibility toward impact of industrial waste facilities for the future is hard to obtain." Private waste disposal company and public agencies are thus severely constrained. For example, Kyoukusei Clean Ltd, industrial waste firm based in Asahikawa City, proposed to build industrial waste facilities in Takasu area faced resistance from the local residents. Despite high demand from outside Hokkaido industry and numerous proposals to build the landfill, approval to do so has not been forthcoming [16].

The Environmental Agency has been concern about the shortage of sites since the late 1970s. "Securing proper disposal," it noted then, "is still a problem" [14]. The Ministry of Health and Welfare acknowledges frankly the problem of the shortage of industrial waste site. The ministry's annual report, in its English translation, notes that "it has become increasingly difficult to build new facilities due to oppositions from near by residents who worry about the effects of the industrial waste facility." The report goes on to note that the insufficient number of final disposal sites is an acute problem that "must be tackled" [21].

A third consequence of local opposition is that Japan has been experiencing growing conflict among different jurisdictions, especially among its prefectural governments, over industrial waste management, especially transportation and disposal issues. There has been an increasing tendency to transport industrial wastes that cannot be treated in their areas to other prefectures. It is possible, of course, that some jurisdictions deliberately impose more rigorous standards than their neighbors in order to encourage this export of industrial wastes. One not so recent example of this problem is Hokkaido Government bans to transport of industrial waste from outside their jurisdiction [48].

Fourth, industrial waste producers in Japan facing their higher bills for treatment

and disposal. The responsible ministry accurately describes the trend as one of "soaring" cost [21]. Inform experts estimate that charges for industrial waste disposal have increased as much as ten times in recent years. Industrial waste disposal expenditures, by way of comparison, rose from around 10,000 yen in the mid 1990s to 30,000 or 40,000yen per ton by the end of 2004 [17]. This cost trend causes by NIMBY-type political resistance, stringent of industrial waste standards, uncertainty of construction, and shortage of landfill. Other factors include the increasing amounts and complexity of wastes [47].

The fifth, the problem is that of unsafe and illegal dumping of industrial waste. While much of industrial waste in Japan is properly managed, it is clear that much also is not being handled and disposed of safely such as Teshima Island, Gifu, and Aomori and Iwate case. Materials deposited in non-secure landfills sometimes contain hazardous chemicals and organic materials. There are about 500,000 tones of toxic waste have been dumped illegally in the Teshima Island. On-site dumping of industrial waste by companies has also led to soil, ground water, stream pollution as well as human health and economy [10].

Although such sensitive matters as this might not have been publicly discussed in Japan in the past, the problem is widely acknowledged today. The Environment Agency, the most outspoken of the national agencies, in its annual reports has been issuing warnings since 1978 about illegal dumping. A 1983 Council on the Living Environment report to the Ministry of Health and Welfare pointed out the need for "the correction of improper, or illegal, disposal of industrial wastes." The general director of the Water Supply and Environmental Sanitation Department of the Health Ministry, has acknowledged that "improper treatment of waste such as illegal dumping, posed a serious problem [10]. There have been "many incidents" of "illegal dumping," in the last few years. The problem is increasingly being recognized by prefectural and local governments as well. Fukushima and Hokkaido Prefectural official report they, too, have "a big illegal dumping of industrial waste" [19]. The illegal dumping of massive amount of waste at Teshima Island in the Seto Island Sea raised the issue of accountability. The area of waste covered 460,000 cubic meters of hazardous waste [12]. In December, 2000, the Police of Aomori and Iwate Prefecture discovered illegal dumping of industrial waste. Most of the 820,000 cubic meters industrial waste is originated in Tokyo and its neighbouring prefectures [45]. On March 10, 2004, the Police discovered as much as 700,000 cubic meters of industrial waste buried in the surrounding valley at Gifu's Tsubakibora district. It seems likely that recent amendments to the Waste Management Law were in part motivated by a desire to deal

---

with this problems.

There is a recognition that the problem is worsening. An authoritative analysis of waste management research in Japan concluded that "illegal dumping has increased" [47]. The official annual report of the Health Ministry has similarly acknowledged that "illegal dumping is on the rise"[21].

The report of the Ministry of Health and Welfare Committee suggested the following four measures to counter illegal dumping:

- (1). Promotion of waste reduction, reuse and recycling;
- (2). Improvement of safety standards a recovery of public trust in the legal treatment of industrial waste: by strengthening the standards, by permitting the creation of mini-landfill sites, and by the full public disclosure of all relevant information;
- (3). Enforcement of countermeasures against illegal dumping by strengthening the penal regulations and by enriching the existing system; and
- (4). Establishment of a system to provide the necessary funds for restoring polluted land.

The report and regulation, however, mute about the standard cost to be incurred by the producers/generators of the waste, the disposal business, or the local government.

Meanwhile, the Japanese Bar Association produced its own report on the revision of the Waste Management Law [20]. The report stated that the creation of final landfill sites was not itself sufficient to address the problem: it was necessarily to pursue the generators' responsibility as a factor in a society newly committed to the circulation of resources. It would also be necessary to establish a quantitative regulation to an intermediate facility, thus aiming to abolish a lower limit on landfill sites and, so, to establish a closed system for the proposal of hazardous wastes. The report also argued that the generators should donate a fund for restoration and compensation, and if illegal dumping had occurred, the local government should have the authority to issue an order to restore sites to their original condition. It also insisted that no waste disposal facility should be sited anywhere near a headwater reservation area, that information about sitting should be publicly disclosed, that local residents should have the right to operate a surveillance system to monitor the sites, and the construction standards for final landfill sites should be reconsidered.

The Waste Management Law was further revised in 2001. The revision included the following features:

Procedures for sitting must be clarified through adoption of the Environmental Impact Assessment. (The installer of the facility must carry out an investigation into the effect of the facility on its immediate environment, while the local governor must

---

publish the results of the investigation and hold a hearing to consider the opinions of those affected both government and stockholders, before permission can be given to construct a landfill site).

The management record of the disposal facility must be made public. (The installer of the disposal facility has to also keep a record of the management and maintenance of the facility and, again, according to certain terms, must make this record public).

The appropriate operation and maintenance of the final landfill sites bear the cost of the operation and maintenance during the period of the landfill.

The penal regulations for the illegal dumping of industrial waste must be strengthened. A maximum fine of 100 million yen to be imposed on anyone judge guilty of illegal dumping.

Illegally dumped waste problem must be deal out properly. The business world and the government must donate/create a fund to cover the expense for the disposal of an unknown dumper's industrial waste. The generator should responsible for their waste which is dumped illegally.

However, the revised law has been criticized on several counts. The responsibility to be borne by the generator of the waste has actually been reduced, rather than extended. The fund to restore land damage by illegal dumping depends entirely on voluntarily contributions. The opinions of the interest groups, the local government, the affected parties, and the specialists are granted no more than a hearing. No regulations are imposed upon sitting. As far as reducing disputes over industrial waste goes, 60% of local governments consider the revised law useless. On December 26, 1997, the Director of Water Works and the Environment, on behalf of the Ministry of Health and Welfare ordered local governments to re-examine how far the local by laws had been applied in practice, over and above those regulations whose first requisite for the granting of permission to contractors for the construction of landfill sites is to seek for and obtain permission from resident in the area before construction work begin. Approximately 70% of prefectures had made the requisite arrangements for seeking and obtaining local residents' permission to construct sites [50]. So, why, in spite of all the revisions to the Waste Management Law, a radical solution not yet has been found? My own opinion is that the existing law and the general administration of waste control as sponsored by Ministry of Health and Public Welfare is fundamentally flawed. One of the points is that there is no regulation that set standard cost of the waste treatment.

---

#### 4. CONCLUSION

Illegal dumping and the sloppy management of treatment plants are two problems that have defiled the environment, causing water, air, and soil pollution in surrounding areas and spending a very high cost to treat the wastes. Because of this condition, there are rapidly growing opposition (Not in My Back Yard) movements by residents protesting both existing plants and plans to construct new industrial waste treatment plants. Illegal Dumping Prevention should be established. Strengthen of penalty in the Disposal Waste Management should be accompanied by the way out. Moreover, to have exchange information and establish partnerships to develop and implement strategies to combat illegal dumping is another effort. The overall goal of further this study is to examine value of national law enforcement, local efforts to prevent and mitigate illegal dumping. The existing law and the general administration of waste control as sponsored by Ministry of Health and Public Welfare is fundamentally flawed. There should be regulation that set standard of the waste treatment price.

#### References

- [1] Armour, A., *the Not-In-My-Back-Yard Syndrome*, Symposium, February, Faculty of Environmental Studies, York University (1984).
- [2] Armour, A., *The Social Aspects of Devising an Impact Management Program*. In 10<sup>th</sup> Canadian Waste Management Conference, Ottawa: Environment Canada (1988), pp. 379-85.
- [3] Azhar., *Pollution Agreements in Japan: A Case Study of Tomakomai and Kita-Hiroshima City*, Junior Research Journal 5 (1998), pp. 229-232.
- [4] Azuma, H., *Administrative Control and Guidance for Business Enterprisers Discharging Industrial Business Waste in Tokyo*, Paper presented at The Second Seminar on Industrial and hazardous Waste Management, March, Jakarta (1993).
- [5] Bar Association of Kanto District., *Haikibutsu Shortho Kaeseri ni Mukete* [Report toward the revision of waste disposal and public cleansing law]. Tokyo (1996).
- [6] Bord, R. J. and Robert, O'Connor. 1992. *Determinants of Risk Perceptions of Hazardous Waste Site*, Risk Analysis 12, No. 3 (1992), pp. 411-16.
- [7] Connor, D., 1990. *Managing the "NIMBY Syndrome2 in the 1990s: Principles and Cases for waste Managers*, In 12<sup>th</sup> Canadian Waste Management Conference, 1-8 Ottawa: Environment Canada (1990).
- [8] Dear, M., *Understanding and Overcoming the NIMBY Syndrome*, Journal of the American Planning Association 58, No 3 (Summer 1992), pp. 288-300.

- 
- [9] Enloe, C.H., *The Politic of Pollution in a comparative Perspective*, New York: Mckay (1975)
  - [10] Fujiwara, M., *Current Status of Waste Treatment in Japan*, Unpublished paper, Ministry of Health and Welfare (1992).
  - [11] Gerald, Michel., *Whose Backyard, Whose Risk*, Cambridge:MIT Press, (1994).
  - [12] Hanashima M., Takatsuki, T. and Nakasugi, O., *A case study of environmental contamination caused by illegal dumping of hazardous waste*, Haikibutsu Gakkaishi [Waste Management Journal] 7(1996), pp. 208-219.
  - [13] Hershkowitz A. and Salerni E., *Garbage Management in Japan*, INFORM: New York. (1987).
  - [14] Hurdle N, Reich M. and Stiskin N., *Island of dreams: environmental Crisis in Japan*, New York: Autumn Press (1987).
  - [15] Imura, H., *Administration of Pollution Control at Local Level*. In *Environmental Policy in Japan*, edited by Shigeto Tsuru and Helmut Weidner, 54-96. Berlin: Sigma Bon (1989).
  - [16] Interview with *Environmental Live Department, Hokkaido Government* (June 1, 2005).
  - [17] Interview with *Matsumura, Haruo, an Expert of the Japan Society of Waste Management Experts* (March 25, 2005).
  - [18] Interview with *the Official at Takasu Town Official and Wakkanai Municipal Official* on November (2004).
  - [19] Ishino, K., *Waste Management*. In *Environmental Policy in Japan*, edited by Shigeto Tsuru and Helmut Weidner, 320-31, Berlin: Sigma Bohn (1989).
  - [20] Japan Bar Association., *Haikibutsu no shori Oyobi seiso nikan suru horitsu no kaisei ni taisuru ikensho* [Report on the revision of the Waste Disposal and Public Cleansing Law], Tokyo (1996).
  - [21] Japan Health and Welfare Ministry, *Report*. 1991-92.
  - [22] Kahn, H., *The Emerging Japanese Superstate*, Englewood Cliffs, N.J. Prentice-Hall (1970).
  - [23] Kobayashi, K., *Illegal dumping of industrial waste and new law*, <http://strategis.ic.gc.ca/epic/internet/inimr-ri.nsf/en-gr117612e.htm>, (2003).
  - [24] Kraft M. and Ruth K., *Citizen Participation and Hazardous Waste Policy Implementation*. In *Dimensions of Hazardous Waste Politics and Policy*, edited by Charles E. Davis and James P. Lester. New York: Greenwood (1988).
  - [25] Lake, R.W., *Rethinking NIMBY*. Journal of American Planning Association 59.no.1 (Winter 1993),pp. 87-93.
-

- 
- [26] Liberel, S. H., *Project Implementation in Japan: Origin of delay in developing Energy Facilities*, Journal of Business Administration 17. No.1-2 (1987-88), pp. 249-86.
  - [27] Mainichi Shinbun., *Japan's biggest waste dumping site in Gifu*, (March 19, 2004).
  - [28] Mainichi Shinbun., *7 busted over illegal dumping of industrial waste in Gifu* (October 18, (2004).
  - [29] Matheny, A. R. and Bruce, A. W., *Rethinking Participation: Assessing Florida's Strategy for Sitting Hazardous Waste Disposal facilities*. In Dimension of Hazardous Waste Politics and Policy edited by Charles, E. D. and James, P.L., New York: Greenwood Press (1988), pp. 37-52.
  - [30] Mazmanian D. and David M., *The "NIMBY" Syndrome: Facility Sitting and the Failure of Democratic Discourse*. In Environmental Policy in the 1990s, edited by Norman J. Vig and Michael E. Kraft, 2<sup>nd</sup> ed. Washington, D.C.: CQ Press, (1994.), pp. 233-42.
  - [31] McKean, M. A., *Citizens' Movements in Urban and Rural Japan*. In Social Change and Community Politics in Urban Japan, edited by James White and Frank Munger, Monograph No.4, Institute for Research in Social Science, University of North Carolina at Chapel Hill, (1976), pp 61-99.
  - [32] McKean, M. A., *Environmental Protest and Citizen Politics in Japan*, Berkeley: University of California Press (1981).
  - [33] McKean, M. A., *Success on the Commons: A Comparative Examination of Institutions for Common Property Resources Management*, Journal of Theoretical Politics, No 3 (1992), pp. 247-81.
  - [34] Ministry of Environment., *Survey on Illegal Dumping of Industrial Waste* (2003).
  - [35] Ministry of Environment., *White Paper Focuses on Illegal Dumping*, Tokyo (2004)
  - [36] Pierce J.Tsurutani T. Lovrich NP, and Abe T., *Vanguards and Rearguards in Environmental Politics: A Comparison of activists in Japan and the United States*, Comparative Political Studies 18, No.4 (1986),pp. 419-47
  - [37] Phil, W., *A Canadian Environmentalist*, quoted in Amour, Audrey, ed, *The Not-In-My-Back-Yard Syndrome*, Symposium, February, Faculty of Environmental Studies, York University (1984)
  - [38] Popper, F. J., *Sitting LULUs. Planning* (April 1981), pp. 12-15.
  - [39] Portney, K., *Sitting Hazardous Waste Treatment Facilities: The Nimby Syndrome*, New York: Auburn House (1991).
-

- 
- [40] Rhodes, T. C., and Paul N. W., *Sky Islands, Squirrels, and Scopes: The Political Economy of Environmental Conflict*, Land Economics 71. No.1 (February 1995), pp. 106-21.
  - [41] Richardson, B & Flanagan, S., *The Political Culture of Japan*, Berkeley: University of California (1974).
  - [42] Richardson, B & Flanagan, S., *Politics in Japan*, Boston: Little Brown (1984).
  - [43] Salcedo R.N., Frank C, and Randolph C., *Environmental Impacts of Hazardous Waste Treatment, Storage and Disposal Facilities*. Lancaster, Penn: Tecnominc ((1989).
  - [44] Special Committee on Industrial Waste in the Living Environment., *The fundamental direction of countermeasures to cope with industrial waste*, Ministry of Health and Public Welfare, Tokyo (1996).
  - [45] Shimizu, K., *Rural areas beset by illicit city trash heaps*, Japan Times, (May 24, 2003).
  - [46] Taguchi, M., *Asahi Shinbun*, (January 25, 1998).
  - [47] Tanaka, M., *The State of the Art of Investigations and Researches in the Field of Waste Management in Japan*, Bulletin, Institute of Public Health. 34. No. 3 (1985), pp. 8394.
  - [48] Television News of Asahi Television., *The news reported on the dead of victims of nuclear reactor accident in Ibaraki Prefecture*, on 10:00 pm. (January 27, 2000).
  - [49] The Asahi Shinbun., *Turning a Blind Eye: Japan's garbage mountains keep getting higher*, (on September 25, 2004).
  - [50] The Nihon Keizai Shinbun., *Ministry of Health and Welfare* (April 9, 1997).
  - [51] Ui, J., *Pollution Export*. In *Environmental Policy in Japan*, edited by Shigeto Tsuru and Helmut Weidner, 395-412. Berlin: Sigma Bohn (1989).
  - [52] Waste Management Law (WML) 2001, Articles 1, 2 (2), 4, 5, 12, and 19.
  - [53] Weidner, H., *Japan: the success and limitations of technocratic environmental policy*, Policy and Politics 8(1), (1986), pp. 43-70.
  - [54] Yamanouchi M and Otsubo K., *Agreements on Pollution Prevention: Overview and One Example*. In *Environmental Policy in Japan*, edited by Shigeru Tsuru, and Helmut Weidner, Berlin: Sigma Bon (1989), 221-45.
  - [55] Yokoyama, K., *Review of Environmental Protest and Citizen Politics in Japan*, edited by Margareth, A. McKean. Japan Quarterly 29. No.1 (January-March 1982), pp. 112-13.
-

---

### *Profile*



Azhar is a lecturer at Faculty of Law, Sriwijaya University, Indonesia. He obtained his Master degree in Sociology from Valdosta State University, Georgia, USA in 1992. He also obtained Master of Laws from Graduate School of Law, Hokkaido University, Japan in 1998. In 2001 he obtained Doctor of Laws from the same institution. Since 2004, he has been pursuing as a Japan Society for the Promotion of Science (JSPS) Post Doctoral Fellow at Graduate School of Law, Hokkaido University, Sapporo, Japan. He carried out his research under guidance of host Professor Matsumura Yoshiyuki, Graduate School of Law, Hokkaido University."