Notes for EGEO 423 Pacific Rim : Sustainable Environment

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Abstract

The Japanese government has constructed facilities such as dams and nuclear power plants in the periphery for the purpose of supplying the core with energy and water in the process of modernization. This essay highlights the environmental issues in the periphery concerning waste, dams and nuclear power plants caused by the government's ignorant policies in favor of the local people. The waste issues focus on the illegal dumping of industrial waste in Teshima and dioxins coming from the incinerators at Kunugiyama. The Nibutani Dam represents the dam issues. Lastly, the nuclear issues consist of referendums on nuclear facilities in Maki, Kariwa and Miyama, and the nuclear disaster in Tokaimura. It is concluded that the local people's struggle for social justice and decentralization backed by others is a driving force for the government to improve its policies.

Key words: local people, periphery, core, local knowledge, decentralization

1. Introduction

Last fall, I taught a course called "Environmental Problems in the Peripheral Regions in and outside of Japan" at Western Washington University. It sought to understand what concepts should underlie the restoration of the periphery through the consideration of history and the structure of environmental problems. The topics included mercury poisoning in Minamata, pre-modern water control system in Yanagawa, the residential movement against the dam plan in Kito, hidden labor in Japanese nuclear power plants, and the atomic bombing in Hiroshima and Nagasaki. Dr. Patrick Buckley was helpful in providing invaluable assistance in preparation for the course.

Dr. Buckley and I offered EGEO 423 as a joint course at WWU from July 21 to August 1 in 2003. This course explored the broad environmental issues facing the three most important Pacific Rim nations, China, Japan and the United States in attempting to create a sustainable environment. The topics include (1) national environmental policy and sustainability, (2) water resources and its control: dams, (3) the role of environmental NGOs, (4) nuclear energy policy and (5) alternate sustainable energy sources.

I dealt with how local people in Japan struggled against the out-of-date environmental policy and opposed the nuclear-first energy policy. I also discussed the short history of the Ainu people and dam construction in Nibutani, Hokkaido. In the classroom, I provided our students with the notes based on the following references and links, and made them clear by showing videotapes related to the topics. This essay shows just the basic notes for the joint course focusing on environmental issues in the periphery of Japan.

2. The local people's struggle against the out-of-date environmental policy

2.1 The illegal dumping of industrial waste in Teshima

2.1.1 Introduction

Teshima, Kagawa prefecture Japan, is a small island located in the Inland Sea of Japan, holding the population of approximately 1400 in the area of 14.6 square kilometers. The local people had been peacefully engaged in fishery and agriculture on the quiet and beautiful island. However, Teshima had been

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known as an “Island of Waste” because 500 thousand tons of industrial waste, from the Osaka area, were dumped there illegally in the 1980s. According to researchers, poisonous substances such as dioxins, lead, PCB, mercury, trichloroethylene, organochlorine compound, benzene, and arsenic, were detected in the soil, underground water, and in organisms living in the surrounding sea. The local people in Teshima repeatedly appealed to the Prefectural government to ban the dumping. However, no one but the Teshima residents paid attention to the case until the Hyogo Prefectural Police arrested a suspect in 1991. The suspect was thought to have been mainly involved in the illegal dumping. This did not mean that the Teshima residents’ struggle for the solution ended. They renounced their claim to reparations for their damage caused by the Prefectural government’s negligence in exchange for the governor’s apology to them. At that time the waste disposal law didn’t yet cover the responsibility of the companies that originally produced the industrial waste. However, they were obliged to bear some portion of the cost to restore the island against the rising tide of public concern on this case. The self-sacrifice on the part of the local people finally urged both of the central and local governments to solve the problem. Kohei Nakabo, known as “the Lawyer for the Citizen’s Justice” led the Teshima residents, saying that the citizens’ movement, based on social justice, will be rewarded without fail in the long run.

2.1.2 Chronological table

1975

Dec.18 Teshima Sogo Kanko Kaihatsu applied to the Kagawa prefecture for a license to dispose harmful industrial waste.

1976

Feb.23 Teshima residents collected 1425 signatures against the construction of an industrial waste processing plant on their island.

Feb.25 Teshima residents petitioned to the Kagawa Prefecture to disallow the Teshima Sogo Kaihatsu’s plan.

1977

Jan.12 Teshima Sogo Kanko Kaihatsu modified the content of its application from harmful industrial waste to harmless waste.

Feb.23 The governor of the Kagawa Prefecture declared his decision to approve the license.

Feb.27 Teshima residents organized the Haikibutsu Mochikomi Zettaihanntai Teshima Jumin Kaigi (literally means, “The Congress of Teshima Residents Resolute to Oppose to the Bringing Industrial Waste onto the Island”).

Mar.1 Teshima residents requested the Kagawa Prefectural assembly to suspend construction of the industrial waste processing plant with 1425 signatures.

Mar.4 515 residents went to the Kagawa Prefectural Office to protest against the plant construction.

Mar.23 The Kagawa Prefectural Assembly adopted the Teshima residents’ request for suspending the construction of the industrial waste processing plant.

Sep.16 Teshima Sogo Kanko Kaihatsu changed the content of the application to earthworm cultivation in the form of using harmless waste.

1978

Feb.1 The Kagawa Prefecture gave a license for earthworm cultivation to Teshima Sogo Kanko Kaihatsu.

Oct.19 Teshima Sogo Kanko Kaihatsu and 584 residents (or 584 households) reached reconciliation.

1983

Complaints against the burning field of waste increased greatly among the Teshima residents.

1984

Apr. Teshima Jumin Kaigi submitted an open letter of inquiry to Kagawa Prefecture.

Oct. Teshima residents consulted with the Administrative Inspection Bureau.

1987

Teshima residents frequently started complaining of health problems.

1990

Nov.16 The Hyogo Prefectural Police Station exposed the illegality of Matsuura’s business. Matsuura was charged with having violated the Waste Disposal and Public Cleansing Law.

Nov.28 Teshima residents organized the Haikibutsu Taisaku Teshima Jumin Kaigi (literally means, “The Congress of Teshima Residents against Industrial Waste”).

1991

Jan.23 The Hyogo Prefecture arrested Matsuura and charged him with having violated the Waste Disposal and Public Cleansing Law.

1993

Nov.11 The Teshima residents requested arbitration based on the Law concerning the Settlement of Environmental Pollution Disputes.

1996

Oct.4 Governor Hirai expressed his “regret that a great amount of shredder dust was brought into the island,” in the general question session at the Prefectural Assembly.

1997

Nov.24 The Teshima residents formally decided to select “the 1st proposal” that the industrial waste will be intermediately processed on the island.

Jan.31 The 14th Round of Arbitration of Environmental Pollution. The Teshima Residents and the Kagawa Prefecture reached an agreement on implementing an intermediate processing in the form of melting the industrial waste at a high temperatures, and decided to set up a committee for technical study.

2.1.3 The Teshima residential movement against the industrial waste Part1 (1975-1990)

In 1975, a waste disposal company named Teshima Sogo Kanko Kaihastu applied to the Kagawa Prefecture for a license to dispose of industrial waste. Shortly afterwards, Teshima residents started a movement against it. In 1976, they collected 1425 signatures against the construction of an industrial waste processing plant. They also petitioned the Kagawa Prefecture with those signatures for not allowing the company's plan. Then the plan was suspended temporarily. In 1977, the company applied again for a license to dispose of industrial waste on the plea of earthworm cultivation.

In 1978, the Kagawa Prefecture thoughtlessly gave a license to the company. The Teshima residents, who opposed the governor's decision, reluctantly reconciled with the company under the condition that no harmful waste be brought on to their island. However, the company broke the pledge and launched its business on the small island as the Teshima residents anticipated. In other words, huge amounts of industrial waste were shipped every day from the Osaka area, Japan's second largest economic area after Tokyo, to Teshima by ferryboat. In 1983, complaints against a burning field of waste increased greatly among the local people on the island. In 1984, the Teshima residents started a campaign against the illegal dumping and asked the Prefecture for guidance. Nevertheless, rather than guidance, the Kagawa Prefecture instructed the company to dump its waste under the title of "metal collection" and identified the waste as valuable material. The waste consisted mainly of shredder dust produced by crushing plastics and rubber after removing steel and nonferrous metals from scrapped cars. In 1987, the Teshima residents started complaining of physical disorders caused by the open burning of the industrial waste. In 1990, the company was charged by the Hyogo Prefectural Police Station on the basis of violating the Waste Disposal and Public Cleansing Law. The Kagawa Prefecture should have cracked down on the company, but didn't take the initiative to solve the problem. In turn, the Teshima residents organized the Congress of Teshima Residents Against the Industrial Waste to tackle the problem.

2.1.4 The Teshima residential movement against the industrial waste Part2 (1991-2000)

In 1991, the Hyogo Prefecture arrested Matsuura, the president of the waste disposal company, under the Waste Disposal and Public Cleansing Law. His company was bankrupt. Then the residents' organization called on the Kagawa Prefectural Assembly to remove the industrial waste dumped on their small island as soon as possible. But the Prefectural government wasn't positive on improving the situation. In 1993, the Teshima residents were determined to search for a solution through the Environmental Disputes Coordination Commission of the central government. This commission mediates and arbitrates in serious area-wide environmental disputes to solve them rapidly and smoothly without depending on a court. On one hand, they asked the commission to approve the removal of the industrial waste; on the other hand, they appealed to the public for the immediate solution.

They carried out sit-down strikes in front of the Kagawa Prefectural Office, distributed a pamphlet titled, "Preserving Our Home" to each household, sent protest cards to the governor and visited every member of the Prefectural Assembly to ask for their assistance. They also walked 300 kilometers throughout all of the municipalities in the Kagawa Prefecture in an attempt to call for their solidarity with the Teshima residents. In 1994, the Cabinet decided to budget 236 million yen for the Environmental Disputes Coordination Commission to investigate the actual situation of environmental pollution, remove the industrial waste, and preserve the environment. In 1995, the Environmental Disputes Coordination Commission released its intermediate report that twelve kinds of poisonous materials such as dioxins and PCB were detected to be containing at the level exceeding Japan's legal standards. In 1996, the Assembly of Tonosho town that governs Teshima submitted an opinion to the central government in addition to the local government demanding the removal of the industrial waste. GreenPeace, an international organization for environmental protection, protested off the shore of Teshima and visited the site of disposition. The Teshima residents brought samples of the industrial waste and polluted water from the island into the downtown Tokyo and appealed to the passengers stating, "Urban waste is tormenting the depopulated island." The governor of the Kagawa Prefecture expressed his "regret that a great amount of shredder dusts were brought into the island," during a general question session of the Prefectural Assembly.

In 1997, the Teshima residents and Kagawa Prefecture reached an agreement implementing an intermediate method of processing the waste based on melting the industrial waste at a high temperature, and decided to set up a committee for technical study. Following the mediated agreement, the technological examination committee carried out many examinations of waste disposal processes, and discussed countermeasures to deal with contaminated groundwater. In 2000, a final arrangement between the Teshima residents and the Kagawa Prefecture was made, in which it was agreed that the governor should apologize to the Teshima residents for failing to prevent serious damage, and agree to complete removal of the harmful waste. The final agreement is composed of 13 items. Below are the main points: 1. The Prefecture will completely remove the waste and 500,000 tons of contaminated soil from the island by 2016. 2. Underground water will be cleansed. 3. The waste will be incinerated at a plant on the neighboring western island Naoshima and melted at more than 1,200 degrees for reuse as building material. 4. The residents and the

Prefecture will establish a consultative committee. 5. The residents will not sue for compensation.

2.1.5 Conclusion

This case provides the Japanese people with three lessons. First, despite Japan's experience with Minamata disease, Japan still has not placed adequate emphasis on the value of people's lives and beauty of its seas and islands. Second, the design of core cities and peripheral regions emphasizes two things: first the core cities are dependent on the peripheral regions for their energy, food, fresh water and even waste dumps. Second, this is based upon a system that prioritizes the appearance of a high quality of life in the core while ignoring the quality in the periphery. Third, it should be significant for the local people to decide what to do on the basis of autonomy by way of prevention of this case.

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2.2 The flaw of dioxin regulation in Japan

2.2.1 Introduction

In 1976, more than a century after it was concocted in a German lab, the seriousness of dioxin pollution grew when the substance was discovered in emissions from a municipal incinerator in the Netherlands. In 1983, Ryo Tatsukawa, a professor at Ehime University, detected the same phenomenon in a Japanese incinerator. However, it was not until 1990 that the central government took guidelines for dioxins produced in the municipal incinerator. Then the regulation referred only to the coming municipal incinerators in future. In other words, small incinerators for industrial waste as well as existing municipal facilities were almost left on the loose. As a result, a great number of local people all over the country, including Kunugiyama in the Saitama Prefecture, where small incinerators were densely located, suffered from dioxins coming from incineration of waste. However, the victims struggled to improve the situation in each region. The citizens in the core city, who had concerns about the deterioration of the environment, organized an NPO "Stop Dioxin Network" in solidarity of the victims in the periphery. These movements promoted the environmental policy in Japan. In 1997, the Japanese government set dioxin discharge standards of 1-10 nanograms per 1 cubic meter of air to be achieved within 5 years for existing incinerators operating intermittently, and 0.1-5 nanograms per 1 cubic meter for newly constructed incinerators. In 1999, the Law Concerning Special Measures against Dioxins went into effect. Then the central government adopted a policy on the concentration of dioxins in the air, water and soil for the first time.

2.2.2 The story of Eiko Kotani, an inhabitant at Kunugiyama

"Nature was abundant at Kunugiyama. Kunugiyama is located in the north of Tokorozawa City where it is adjacent to three other communities: Sayama City, Kawagoe City, and Miyoshi Town. Within a 500 meter radius of Kunugiyama there are 16 incinerators. I moved to this place with my family 20 years ago, when it had a rich natural environment with no incinerators. Then I thought it would be a good place to raise my children. One of my neighbors moved here to relieve her son's asthma, and he recovered from his illness completely. There was an abundance of wildlife such as a variety of birds and small mammals. Rabbits could be seen hopping about and the now-endangered Great Hawk made its nest here. On holidays, the local people enjoyed walking in the copse.

Open burning started suddenly. Nearly ten years ago, in 1991, someone started open burning in the woods only 100 meters from our house. They were burning large electrical appliances and the refuse from scrapped buildings in a large pit. The smoke from such burning smelled bad and depressed us. When the burning started early every morning, the air condition turned so bad that we could no longer open the window. On windless days the smoke lingered all day long and on windy days ashes drifted everywhere. I equipped the house with air cleaners to protect our health. The filters turned black with soot and the black gummy substance that adhered to the machine didn't come off with water. Then I suspected it was an oily smoke residue.

The pollution got worse after incinerators were erected. In 1994, the Saitama Prefecture permitted two incinerators to be erected 100meters from my house explaining that those would produce neither smell nor smoke. However, in fact, the situation got much worse than before. The area where I lived was covered with sickening smoke all the time. I repeatedly faxed my protest letters to the Prefectural office telling that the area had been reduced to a zone without law. The faxes got me nowhere. I, therefore, had to protest directly the waste disposal companies operating near my house. They set fire to a mound of refuse beside the incinerator, and I had them put the fire out a few times. Once catching them open burning, I took photos of the scene. The next day a governmental official contacted me to inform that they were furious. Then he cautioned me against trespassing on their grounds and taking photos without permission. It was incredible. His behavior was much more unacceptable compared with mine. We have a right to protect ourselves from environmental deterioration.

Incinerators were brought into Kunugiyama under the Prefectural guidance. Despite the citizens' unrelenting

protests and complaints to the local government, one incinerator after another was erected in the copse. In 1994, we began inspection tours to Kunugiyama to let many people know what horrible things were happening in the copse. The participants were shocked to realize that even though factory emissions had come under regulation the refuse incineration was completely unregulated. Standing beneath a large smokestack, they put handkerchiefs to their mouths. The companies sometimes made use of dobermans for the purpose of threatening us. I had to call the police once when my son, on the way to returning from school, found a doberman at our front door."

2.2.3 Evidence of dioxins pollution

Table 1 Evaluation of atmospheric pollution using black pine needle in Saitama prefecture

Sampling location (city)	TEQ level (pg/g)
Shimotomi (Tokorozawa)	71.4
Nakatomi (Tokorozawa)	28.7
Sakanoshita (Tokorozawa)	43.2
Kume (Tokorozawa)	40.0
Kamitome (Miyoshi)	36.1
Kitanagai (Miyoshi)	25.3
Horikane (Sayama)	20.0
Mizuno (Sayama)	2.3
Kashiwahara (Sayama)	12.3
Shimoakasaka (Kawagoe)	26.9
Imafuku (Kawagoe)	7.9
Wakitahonmachi (Kawagoe)	27.4
Miyadera (Iruma)	31.5
Araku (Iruma)	10.1

*Judgment: High pollution area (>25pgTEQ/g), Middle pollution area (10-25pgTEQ/g), Low pollution area (<10pgTEQ/g)

Dioxins are linked to cancer, skin disease and reproductive problems such as miscarriages and birth defects. Even tiny quantities are hazardous. According to the local activists' investigations of the infant death rate of Tokorozawa and 12 surrounding towns and cities using demographic statistics compiled by the Ministry of Health and Welfare, the infant death rates in all thirteen towns/cities were below the Prefectural averages during the relatively incinerator free (1970-80) , while the infant death rates in Iruma, Miyoshi, Oi, and Tokorozawa were 1.7, 1.64, 1.62 and 1.39 times the Prefectural average between 1989 and 1994, when the steep increase in industrial waste incineration occurred.

Asiaweek reported as follows. "In Tokorozawa, residents have helped push a motion through the city council to control dioxin pollution. 'We know dioxins can damage human reproductive functions,' says campaigner Eiko Kotani. Concern about her son's health turned the mild-mannered housewife into an activist. "It scares me that we are sprayed with this chemical day after day, like cockroaches," she says. She and her companies asked professor Miyata, who is famous for analyzing dioxins in favor of local people, to measure the dioxins in their environment (Table1). It terribly shocked the Japanese people who were indifferent to the dioxin cases and helped rouse them to pressure the government for the regulation of the dioxins."

2.2.4 Conclusion

Dioxins, the killer chemical, are mainly produced by burning plastic and materials containing chlorine. Since space is scarce in Japan, three-quarters of all waste ends up in the furnace rather than in landfills. At present 70% of the incinerators in major industrialized countries are concentrated in Japan. The pro-incineration policy distinguishes Japan from Western countries in the waste practices. As a consequence, dioxins levels in the air were at worst three times those of the United States and some European countries before the legislation of the Law Concerning Special Measures against Dioxins in 1999. In Japan, once a system was established, the situation could change completely. For instance, in Noboribetsu City, a neighboring city to Muroran City, the municipality succeeded in reducing dramatically dioxins concentration in the air in a couple of years. However, Japan has relied too much on incineration in the disposal of waste. It must first prioritize reduction of waste and second, avoid burning polyvinyl chloride. Third, regulate trans-prefectural-boundary movement of the waste from Tokyo or Osaka to the periphery like Teshima and Kunugiyama.

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3. The Indigenous People and Dam Construction

3.1 Ainu, an indigenous people in Japan, in Nibutani

3.1.1 Introduction

The Ainu people once lived in harmony with nature in Hokkaido named "Ezo" in the Ainu language. After the fifteenth century, the Japanese began immigrating downward from the Honshu and elsewhere in Japan to Hokkaido. Afterwards, there were conflicts between the two groups of people. The Japanese defeated the Ainu, who had lived peacefully, and consequently, dominated this first nation. Under the Meiji regime, the Japanese government tried to push the integration of the Ainu into Japanese society. In 1899, Japan enacted the Former Native Protection Law, which included articles focusing on the promotion of agriculture. This means that the

Ainu living by hunting and farming was deprived of their life and culture. In 1997, a new law replaced the anti-humanitarian law, with the result of the Ainu's struggle against the Japanese government.

Two classes are allotted to this topic. The first focuses on the origin of the Ainu and their struggle for human rights against the background of discrimination in modern times, while the second highlights the Ainu's thought on nature and the verdict of the Nibutani Dam Case which triggered the 1997 Act.

3.1.2 The origin of the Ainu

"Ainu" means human. The Ainu people regard things useful to them or beyond their control as "Kamuy" gods. In daily life, they pray to and perform various ceremonies for the gods. The word "Ainu" refers to the opposite of the gods.

There is no proof that determines the origin of the Ainu and the Japanese. Some scholars recently advocate the following hypothesis. Mongoloid peoples once were of two types: Southern Mongoloid and Northern Mongoloid. Before the Jomon Period, dated from ca. 12,000 BC. to ca. 400 B.C., the Southern Mongoloid started moving northward and settled the Japanese archipelago, including Okinawa and Hokkaido. In the Yayoi Period (ca. 400 B.C.-ca. A.D. 250), the Northern Mongoloid, who are considered to have rice crop skills, arrived at the present-day Kinki region in great numbers and expanded its territory both northward and southward. It was not until the end of seventh century that the Japanese state came into existence for the first time. At that time Hokkaido, Tohoku, and Okinawa were not included as a part of Japan. In the early twelfth century the Tohoku region was annexed to Japan. Okinawa was dominated by the Ryukyu dynasty between the fifteenth and the mid-nineteenth century. In 1868, when the Meiji era began, Hokkaido as well as Okinawa was governed by the Japanese.

Note from the website of the Ainu museum: The Jomon Period is named for its unique rope-incised earthenware vessels. Indeed, the word jomon itself means "rope-patterned." Such vessels from all regions of Japan form the foundation of the Jomon collection, but hunting tools and implements for prayer and incantation made from earthenware and stone also give us hints as to the daily and spiritual lives of these early inhabitants of Japan. The tradition of rice cultivation first began in the Yayoi Period. Clay vessels of this period are extremely simple in comparison to their Jomon predecessors. The importation of bronze technology from Korea led to the production of bronze swords, spears, bells, called dotaku, and other implements. Between the Yayoi and Muromachi Period, Hokkaido experienced periods of earthenware cultures, such as the Zoku-Jomon Period, the Satsumon Period and the Okhotsk Culture. It was during the Kofun, or Tumulus Period (ca. 250-ca. 600), that Japan took its first steps towards unification. The period is named for the enormous burial mounds constructed by powerful rulers as symbols of their authority.

3.1.3 Ainu's struggle for social justice

In the mid-1400s, the Japanese extended their influence over southern Hokkaido, primarily Esashi and Mastumae. Later, they came to oppress the Ainu. To resist the oppression by the Japanese, the Ainu waged the Battle of Kosyamain in 1457, the Battle of Syaksyain in 1669, and Battle of Kunasiri-Menasi in 1789. However, the Ainu lost each time. After losing the Battle of Kunasiri-Menasi in particular, the Ainu fell completely under the control of the Japanese.

In the Meiji era, under the government policy of assimilation, the Ainu were prohibited from observing their daily customs. Given the status of former aborigines, the Ainu were forced to abide by Japanese daily customs. In 1899, the Hokkaido Aborigine Protection Act was passed. The act primarily aimed to provide relief for the Ainu and help them become engaged in agriculture. However, the act designated the Ainu as "former aborigines" and clarified the distinction between the Japanese and the Ainu. In the late Meiji era, with an increasing number of Japanese colonizing Hokkaido from Honshu, the oppression and exploitation of the Ainu was replaced by discrimination.

The year 1930 saw the formation of the Ainu Kyokai, the first organization of all Hokkaido Ainu. Although headed by a Japanese bureaucrat and operated as an extension of the Social Section of the Hokkaido Government, the Ainu Kyokai provided an important forum for likeminded young Ainu from previously isolated communities to come together. In the 1970s, influenced by domestic and international movements for civil and human rights, and the struggles of indigenous people elsewhere, young radicals challenged the comfortable institutional position of Utari Kyokai, the successor of the Ainu Kyokai, as a distributor of government largesse, and also launched an attack on the assimilation policies of the government itself. The Japanese government, however, reported to the Human Rights Committee of the United Nation in 1980.

> The right of any person to enjoy his own culture, to profess and practice his religion or to use his own language is ensured under Japanese law. However, minorities of the kind mentioned in the Covenant do not exist in Japan.

Afterwards, Ainu leaders participated in international forums, converged with the worldwide indigenous people's movement and advocated for indigenous language rights. At last, the Ainu were invited as members of an indigenous people to participate in the opening ceremonies for the United Nations International Year of the World's Indigenous People in December 1992. As a result, in 1997 a ruling was made against the Nibutani Dam, a dam that threatened a sacred place to Ainu culture. The ruling declared its illegality and led to

the Ainu New Act named, “An Act for the Promotion of Ainu Culture, the Spread of Knowledge relevant to Ainu Traditions, and an Education Campaign.”

3.1.4 Conclusion

In Japan, rulers have stressed that Japanese are homogenous in an attempt to urge their people toward battlefields and businesses. The Ainu had been forced to keep silent through discrimination and assimilation until the 1997 Act. There are still some influential politicians, among the ruling party, who don’t want to admit that there are minorities including the Ainu in Japan. Discrimination against minorities is incompatible with social justice that a democratic society needs. The assimilation of the Ainu is likely to endanger racial diversity that breeds democracy in Japan.

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3.2 The dam construction in Nibutani

3.2.1 Introduction

Linguists estimate the number of languages in the world to be between 5,000 and 6,700, and 60 percent are endangered. The endangered languages are among the indigenous peoples, in the tropical regions, that are threatened by the modern development. Today environmental scientists come to recognize that Inuit people know the local climate in the Arctic best and Pacific Islanders have learned the detailed management of the local marine resources. Indigenous languages are linked with the local place. The loss of the local knowledge has gone hand-in-hand with over-fishing and degradation of the marine environment. The Ainu language is on the verge of extinction due to the Japanese assimilation policy. Dr. Shigeru Kayano and other Ainu people make every effort to tell their children their own language by administrating the Ainu language school. The verdict of Nibutani Dam Case led to the 1997 Act, which is expected to save the Ainu culture from extinction.

3.2.2 The Ainu’s idea on nature

Dr. Kayano’s speech in the book, *“Fish fish, first people”*, issued by University of British Columbia, which is centered on salmon, outlines what the Ainu culture is and how the culture has not been respected.

“The Ainu word for salmon is shipe. It comes from shi-e-pe, which means “the real thing we eat” our staple food. In particular, when we caught salmon before they spawned we took only the amount needed to eat for that day. One reason is that before they have laid their eggs salmon hey are very fatty, so if split and dried they turn brown with the fat and taste bad, no matter how they are prepared. Knowing this well, the Ainu never caught salmon before they had spawned if they intended to preserve the fish. This practice was based on long experience and cooperation with nature, and in the years when the Ainu managed the rivers and the fish, they ate only the ‘interest’ on the returning fish, so there was never a worry about the ‘capital’ or main stock of fish disappearing.

The Japanese who immigrated into our land in overwhelming numbers unilaterally imposed a ban on the harvest of salmon, an act of Ainu-killing foolishness that robbed our people of the right to a living, and thereby the right to life. Forbidden to catch their staple food, the Ainu fell into indescribable hardship with many starving to death. This accelerated the precipitous decline in population.

When I was a child, our father secretly caught salmon in the dead of night, cooked it right away and fed it to the children. We were warned that if a stranger asked us if we ate salmon, we must not admit it. In other words, children of my generation have a memory that salmon was a food to be eaten in secret. Once my father was being taken away by the police for catching salmon, the fish that he caught for us and told us to eat without ever telling anyone, the fish you weren’t allowed to catch. As my father was led away, I ran after him, sobbing. I remember this as clearly as if it were yesterday and the memory always bring tears to my eyes.

More than seventy years have passed since my father was led off, but today, Ainu rights to salmon are not yet recognized, and if we attempt to catch a single fish without permission, we can be arrested. From the age of the gods, from the age of the ancestors, the Ainu people have lived on salmon. So I raise my voice to say to the Japanese who invaded our land and stole our fish, ‘Give us back our staple food!’

While it goes without saying that language is extremely important in the transmission of culture, I would like to say that Ainu should also be able to catch salmon freely for the sake of transmission of our food culture. I should also mention that there are at least two dozen traditional ways of preparing salmon to eat, and this tradition must not be lost. Only by going to the river and catching fish with our own hands, using our own tools, can Ainu begin to understand our traditional food culture.

The Ainu of old considered nature to be sacred because they saw the sea, the rivers and mountains as divine storehouses of food. For this reason they celebrated the god of the sea, Atuykorkamuy; the god of the mountain forests, Shirkorkamuy; and the god of river waters, Wakkauskamui. These gods fed us with food from nature and kept us alive.”

3.2.3 Nibutani Dam Case

The 1997 Act recognizes the Ainu as an ethnic minority with a need to protect its cultural heritage; it does not however, protect their indigenous rights. The law came into effect after a court case involving the two Ainu, Dr. Kayano and Mr. Tadashi Kaizawa, who were fighting to stop the building of a dam on their property. The case is known as the Nibutani Dam Case.

In the 1960s, the Japanese government planned to build the Nibutani Dam in the Saru River for the purpose of supplying water to the industrial park of Tomakomai. Although the industrial park went bankrupt soon, the government did not cancel the plan, and changed the purpose of the dam from water supply to the industrial park to control floods. In other words, the bureaucrats who took charge of the dam plan tried to force the dam construction by changing the purpose. The Japanese government, therefore, carried out the expropriation of the land that the two Ainu didn't surrender to the government. In 1993, Dr. Kayano and Mr. Koichi Kaizawa, the late Tadashi's son, sued the government for the invalidity of the expropriation and suspension of the construction. In 1997, the court, on one hand, declared that the expropriation was illegal and that the Ainu were an indigenous people by international definition. The court, on the other hand, ruled that the dam was completed and consequently, it would be against the public interest to have the dam dismantled, which means that the ruling partially dismissed the two plaintiffs' claim. However, it produced a great outcome for all of the Ainu. The 1997 Act is considered an answer to the court's decision.

3.2.4 Conclusion

Mr. Kaizawa, one of the plaintiffs of the Nibutani Dam Case, complained that the Nibutani Dam must be conserved as a symbol of negative heritage to the Ainu. What he really wanted to do was to restore the nature, which should underlie the culture, destroyed by the so-called modernization including the Dam construction. He, therefore, established an NPO a couple of years ago to replace the needle trees in his land with native ones. Today's Hokkaido is built on the basis of the Japanese modern knowledge influenced by Western countries. The local knowledge based on the Ainu culture that has been created through cooperative work in line with nature might be a key concept to sustain Hokkaido. The first step in the right direction will begin by returning the right to catch salmon to the Ainu people.

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4. Local people's opposition to the nuclear-first energy policy

4.1 Referendums on nuclear facilities in Japan

4.1.1 Introduction

More than half a century has passed since atomic bombs were dropped on Hiroshima and Nagasaki for the first time in human history. The Japanese people mourn for the victims and vow never to cause a war in future every August. Despite the unsolved issues of waste disposal and the possibility of developing nuclear weapons, nuclear power plants have spread in the name of nuclear energy for peace. The central government has forcibly promoted a nuclear-first energy policy as a national policy with discussion in closed-door meetings. However, public opinion has grown more hostile towards the government as a result of a series of high-profile accidents and cover-ups in recent years. These include a leakage of sodium coolant at the first breeder reactor Monju in 1995, a fire at a nuclear fuel reprocessing plant in 1997, and a critical reaction accident at a nuclear fuel processing facility in 1999. As a sign of the changing climate, anti-nuclear campaigners have elected mayors in some towns. In 1996, Maki Town in northern Japan rejected a plan for a nuclear plant in a referendum for the first time in Japan. In 2001, the referendum in Kariwa, a town in the same prefecture as Maki, on the pluthermal plan, which mixed oxide fuel in light water reactors, resulted in the opponents' victory. Shortly afterwards, the Miyama referendum in the Mie Prefecture followed these results. Thus the nuclear-first energy policy led by the central government is facing the local peoples' opposition.

4.1.2 The nuclear power plants of Japan

The Japanese Atomic Energy Research Institute launched the operation of a demonstration power generating reactor on October 26, 1963. The Tokai nuclear power plant began running the first nuclear reactor for commercial use in Japan in July 1966.

After the first oil crisis of 1973, nuclear energy expanded steadily in Japan as a quasi-domestic form of energy that was considered extremely economical as a basic alternative to petroleum. The capacity increased to exceed 10 million kilowatts in 1978, 20 million kilowatts in 1984, 30 million kilowatts in 1990, and 40 million kilowatts in 1994. Regarding the future scale of Japan's nuclear power generation, the Government's Atomic Energy Commission set the goal on its long-term nuclear energy plan, formulated in June 1994, of 45.6 million kilowatts in 2000, 70.5 million kilowatts in 2010, and, hopefully, 100 million kilowatts in 2030.

As of the end of 2000, the world total is up to 430 plants, of which Japan's share is one eighth in both the number and capacity. In 2002, Japan had 53 nuclear power plants in operation, accounting for 37% of total electricity generation. In addition, there are construction plans for 22 more reactors at 14 locations based on the

hypothesis of prevention of global warming. The central government emphasizes the importance of nuclear power plants from the viewpoints of growing demand for electricity, economic advantage, the prolonged period of uranium supply compared with petroleum, and prevention of global warming. As shown by the referendum in Maki, however, it will be extremely difficult to find land for constructing new nuclear power plants in Japan.

Furthermore, in Japan, 10 electric power companies have divided up the whole nation between them and are providing electricity to each area under regional monopolies. Currently, the liberation of the electric power market is being promoted, but people are still obliged to depend on the monopolized energy supply by the companies. The monopoly represents strong ties between the central government and the companies. The referendum could be a trigger to disconnect the strong ties.

4.1.3 The referendums in Maki, Kariwa and Miyama

In Japan, lands are privately owned and fishing rights are rendered to fishermen's unions. Meanwhile, assembly men elected in their regions are able to decide their regional policies. In order to build a nuclear plant, the purchase of the construction site, the renunciation of fishing right on the area to be affected by hot waste water, and the agreement of the mayor and the assembly will be needed.

The electric companies are able to construct and operate a nuclear power plant, once they secure the land and the sea rights, and obtain the agreement from municipalities. Under the slogan of "Nuclear power is a state policy, so you should be cooperative," the land and the sea rights were sold at dozens of times higher than regular prices. Municipal officials were made to agree, after being persuaded that the region would be enriched by the government's incentives for building nuclear power plants. In fact, compared to regions without nuclear power plants, enormous amounts of subsidies and donations were allocated, public buildings were constructed, and roads and ports were renovated. For instance, Tomari, the richest community in Hokkaido, gets a huge amount of subsidy in exchange for acceptance of the nuclear power plants.

Nevertheless, the first referendum held in Japan was on the approval of the construction of a nuclear power plant in Maki Town, Niigata Prefecture on August 4 1996. Since then, there have been a number of referenda over the issues such as an industrial waste disposal site, a military base and so forth. According to Japanese laws, the establishment of an ordinance can be proposed based on the request of one fiftieth of the voters' direct claim, but without the action of the assembly, that ordinance can't be passed into law.

The direct proposal for a referendum on the Pluthermal plan in Kariwa village was submitted for the first time by Kariwa and Kashiwazaki to the assembly in January 1999. However, the proposal was dismissed on March 23. After that, the JCO nuclear accident took place, followed by the exposure of the date falsification of MOX fuel for the Takahama nuclear power plant owned by KEPCO, and the scandal concerning slush spending on Rapika built with the government subsidies for promoting areas adjacent to nuclear power plants. Due to this series of incidents, the referenda were finally undertaken.

Both in Maki and Kariwa, promoters of nuclear energy, expressed their opposition to the referenda, insisting that referenda were unnecessary. There were indescribable difficulties on the way to the implementation of the referenda. Miyama Town referendum was different from these two. First, the utility did not even have a plan yet to build a nuclear power plant in the town. Second, the bill was proposed by nuclear promoters (it is said that the Town Mayor, who is a civil engineering and building contractor, was the one pulling the strings).

Miyama Town is located 15 km southwest, in a straight line, from the former planned site for the Chubu Electric Power Company's Ashihama nuclear plant. The company had given up on this project in Feburuary, 2000, after the governor of the Mie Prefecture announced that plans for Ashihama would be cancelled. As an alternative to the plan for the Ashihama nuclear plant, local building contractors (who are also town councilors) waged a campaign to have the plant built in Miyama Town. Since they collected petitions in favor of the project from more than 63% of the constituents, they proposed the referendum with confidence. However, many people who signed the petition did so reluctantly under pressure in relation to their work, or because they were asked by relatives. On November 18, 2001, a referendum was held. The voter turn out was 88.64% and the overwhelming majority voted against the plan.

4.1.4 Conclusion

The nuclear power plant is in principle incompatible with modern democracy. The control of the nuclear power plant requires centralization, while our society is heading for modern democracy based on decentralization. Local people have been divided into two groups: for and against the plan of nuclear power plants by the central government. In recent years, some local people who doubt the government's decision to build a nuclear power plant without their approval have tried to implement a referendum over the self-righteous decision. They have won in three places: Maki, Kariwa and Miyama. As a result, the central government and the electric power companies need to review their plan of nuclear power plants in such areas. In this context, the central government must change its nuclear-first energy policy based on the will of the local people. Priority needs to be taken, not to increase nuclear power plants, but to reduce the amount of electric supply through the increase of electrical efficiency, to shift the energy

resources from nuclear and fossil fuel, to the renewable, and to democratize the energy policy.

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4.2 The nuclear disaster in Tokaimura

4.2.1 Introduction

In 1999, a nuclear accident occurred in a private nuclear conversion plant in Tokaimura, Japan. Dozens of workers were exposed to a massive dose of radioactivity and two of them died in hospital. Thousands of the local residents were evacuated. It is rated the worst nuclear accident since the 1986 Chernobyl disaster. In 2000, the accident investigation committee founded by Citizens' Nuclear Information Center, the most reliable Non Profit Organization for nuclear problems in Japan, presented a result of the poll of the local residents of Tokaimura on the accident at an international conference in Germany. Tokaimura is where the Japanese nuclear development began, and 1/3 of the village's population works for the nuclear industry. Nevertheless, the results of their poll show that 38% are against any further development of nuclear energy, and 53% felt that nuclear business in the village should be down-sized from now on. It shows that Japan's energy policy has to be totally revised.

4.2.2 The first critical reaction accident outside the nuclear reactor

An article in the *Time magazine* gave an outline of how the Japan's worst ever nuclear disaster occurred. The Tokaimura unit is part of the fuel supply line for an experimental fast-breeder reactor nearby. At the conversion plant, uranium is combined with nitric acid to produce uranium dioxide; this is taken to another facility where it is combined with plutonium to produce the enriched uranium pellets used as fuel at power plants. What happened on October 30, according to JCO Co. Ltd., (apparently the name of the company is JCO, Inc., formerly known as the Japan Atomic Fuel Conversion Company, JCO not being an acronym, but the name itself), the subsidiary of Sumitomo Metal Mining that operates the plant, is that workers mixed too much uranium-16 Kg instead of the maximum allowed 2.4 Kg-with the nitric acid. They used stainless steel buckets to pour the liquefied uranium solution into a large tank. By doing so, they bypassed the usual procedure of feeding the uranium solution through a device that measures the proper amount to be distributed to the tank, apparently because the plan had received an order to produce a higher grade of the uranium compound. News reports in Japan say the workers, who each had at least 10 years of experience, were not practiced in mixing the uranium solution in this unorthodox manner. The result was a potent radioactive cocktail. The concentration of uranium was so much higher than usual that by the time workers had poured the seventh bucketful of the concoction into the tank, it triggered nuclear fission. Tokaimura, a sprawling coastal town, should be prepared for nuclear accidents. Its 33,900 residents live in the vicinity of 15 nuclear-related facilities. The town has a Nuclear Energy Science Museum, road signs with cartoon drawings of Albert Einstein and avenues with names like Atomic Research Street. The town has witnessed three other major accidents in the past four years: a radiation leak at another plant in 1995, a fire and explosion at a nuclear-waste treatment plant in March 1997 and the discovery of 2,000 drums leaking radioactive waste in August 1997.

4.2.3 The chronology

September 30, 1999

At around 10h35, a severe accident was initiated at JCO's uranium conversion facility in Tokaimura, about 130 km north-east of Tokyo. JCO is one of the only two companies, along with Mitsubishi Nuclear Fuel Co. Ltd., to produce nuclear fuel in Japan. Mitsubishi specializes in fuel for pressurized water reactors, while JCO since 1980 has manufactures' fuels for light water reactors and fast breeder reactors. According to Japan Atomic Industrial Forum, the JCO's Tokai plant is able to process 715 tons of uranium for light water reactor fuel and three tons of uranium for FBR fuel. The conversion of fuel for Joyo was the first operation of that kind in three years and only began on September 22. JCO employs 154 persons. At least two of the three operators have been exposed to lethal doses of radiation. The doses, re-evaluated on the basis of blood analysis, received by the three men exposed to the highest levels were respectively 17Sv (age 35), 10Sv (age 39), 3Sv (age 54). The doses are equivalent or even worse than that of the ground zero at Nagasaki or Hiroshima. Various medical teams are working hard to save their lives. Three ambulance staff members who rescued the three workers also received high doses. In addition, 18 workers who carried out the work outside the facility to destroy the cooling water pipes leading to the precipitation tank-an operation carried out in order to get the water out which functioned as a moderator during the accident - received doses estimated between 20mSv and 103mSv, most of them in 2 to 3 minutes only. Some of the workers also went inside to put neutron absorbing boron water into the tank. The legal limit for workers in Japan is 50mSv per year. In case of emergency, the limit is exceptionally 100mSv for a single operation. Six workers who worked on the

cooling circuit of the precipitation tank have received neutron+gamma radiation beyond the 100mSv emergency limit prescribed by IAEA. The NSC decided to take the measure “beyond the law.” Workers should operate under a special limit of 200mSv, said one member of the NSC. In total, the number of exposed workers rose, with the accident management teams working on site, to 55 people as of 2 October 1999. This included 39 JCO staff members and subcontractors, the 3 ambulance staffers and 7 construction workers who were involved in renovation of the commercial golf course directly adjacent to the JCO plant.

At 11h15, the JCO mentioned the possibility of a critical reaction accident in its first notification of the event to the Science and Technology Agency (STA).

At 11h33, the JCO informed Tokaimura’s municipality of an accident that occurred in their facility.

At 12h19, the JCO in its 3rd notification requested the evacuation of the general public around the plant. The community of Tokaimura established an “Anti-disaster” head-quarter.

At 12h30, the head of the Prime Minister’s office received the first report on the accident. It took almost one hour before he takes action. At the same time, Tokaimura’s officials broadcast information about the accident via the local radios and asked people to stay indoors.

At 15h00, the Tokaimura municipality issued an evacuation request area for residents in the area inside the 350 m radius of the plant.

At 17h45, the first meeting of the Government Emergency Response Headquarter was held.

At 22h30, the first announcement was made to the 310,000 residents of a 10 km zone to stay home or confined where they are.

October 1, 1999

According to Reuters, “As of late Thursday night, 3.1millisievert of neutrons per hour, or about 15,000 times the normal level of radiation, was detected two kilometers from the accident site,” an Ibaraki Prefecture official told Reuters.

At 2h58, according to STA, department responsible for nuclear power within the Ministry for Industry and Trade (MITI), JCO staff started the work to extract cooling water from the outer shell of the tank in which the critical reaction is suspected to be taking place. The water reflected neutrons inwards, helping the chain reaction to be maintained. Due to high levels of radiation, workers had to take 3-minute turns in order to try to operate the valves.

At 3h30, in a press conference, the Ibaraki Prefecture advised the over 310,000 residents of a 10 km radius around the Tokai plant including Tokaimura districts and parts of Mito City, Hitachi City, Hitachi-Ohta City, Hitachi-Naka City, Naka Town, Urigura Town, Ohmiya Town and Kana, as follows:

- Stay indoors. Shut all the windows and switch ventilation off.
- In case of traveling in cars for unavoidable circumstances, keep all the windows of the car shut and avoid using the ventilation fan.
- Tap water is safe, because the source of water supply has been changed.
- Do not drink well water or rain water.
- People who had voluntarily taken refuge to any downwind refuge point are advised to take further refuge, leaving the downwind area.

At 7h00, STA declared that the criticality no longer be continued. Boron water had been injected into the tank, successfully slowing down the chain reactions. Neutron monitors on site now indicate a rapid decrease of radiation levels.

At 9h00, JCO officials declared that the workers had handled the uranium nitrate solution “in a manner that was incompatible with safety regulations”

More than 4,500 people visited hospitals in Ibaraki Prefecture for radiological screening and physical check up. Although no ascertained case of contamination has been detected, a mood of panic dominates. The two victims in critical conditions at the National Institute of Radiological Sciences in Chiba City, east of Tokyo are now suffering from further decrease of lymphocytes -less than 1% (the normal level is around 40%), rendering an extreme vulnerability to fatal infections. It is now apparent that they suffer mainly from external exposure to high neutron and gamma radiation, rather than internal exposure. Principal treatments tried so far include various drip infusions, steroid medication, and dosage of a uranium antidote. Radiological doctors are now considering bone marrow transplantation in a slight hope of saving their lives.

At 18h30 on October 2, 1999, the Japanese government issued a “Safety Declaration” stating that there would be no contamination in the 350 m radius zone and lifted the evacuation.

4.2.4 Conclusion

The Citizens’ Nuclear Information Center (CNIC) made a statement on the criticality accident in Tokaimura, on October 1 in 1999. “This accident has proved that the existing criteria for the location of the site and safety regulation systems that disregard the dangers of nuclear material are significantly flawed. In addition, the delay in notifying local government and the residents, and the lack of sufficient information concerning this accident have brought to light the inability of the nuclear industry and the Science and Technology Agency to sufficiently respond to an emergency. Even at an area like Tokaimura, where there are a number of nuclear facilities including nuclear power plant, it took one hour for the accident to be reported, and not even the evacuees were given accurate information on the matter. In view of these facts, we assert that the company and the STA that can’t even grasp an accurate situation of the accident are not capable of handling nuclear

materials. By denying the possibility of the criticality accident, and neglecting to secure the safety of local residents, the nuclear industry and the STA have indirectly allowed this criticality combustion accident to happen. This fact should not be taken lightly and the responsibility of company and the STA is grave."

Dr. Takagi, the then executive director of CNIC, cast doubts on the government and the nuclear industry while the official version of the events placed the blame on human error. He stated that since there will always be a risk of criticality occurring at plants of this kind, facilities should be built according to a failsafe-foolproof design, so that criticality can be avoided even in cases of equipment failure or human error. He also noted that the final report on the disaster was issued within less than three months after the accident. The central government seemed to rush the report in an effort to get the public to forget their blunder in this tragedy. In my view, these critical opinions on the government's attitude towards the nuclear disaster in Tokaimura must lead the government to the renouncement of its nuclear-first energy policy.

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5. Conclusion

Japan launched modernization late in the 19th century behind the Western countries. Since WWII, Japan has developed its own kind of democracy based on the Pacific Constitution. Equality prevailed over everything, in addition to desire for peace. In other words, indispensable things in life, like rice, were not necessarily exposed to a competitive situation, namely the market economy until recent years. It is a good idea, however, it demands centralized power. Centralization has given birth to bureaucrats who postpone the will of the people to the national interest. That is why Japan is called a centralized country governed by bureaucrats. The environmental policy is, therefore, still on the defensive and the energy policy doesn't reflect local people's voices yet. A breakthrough in restoring the environment requires local people's struggle for decentralization as well as social justice in the periphery in cooperation with citizens in the core. Finally, the local knowledge inherited through work with neighbors in harmony with nature and the citizen-based science ought to be a key to drive people to sublate discrepancy between equality and decentralization.

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