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## *Volume 2: The Discussion Continues*

Akita International University, located in Akita prefecture in the Tohoku region of northern Japan, is a public university corporation established in April 2004 by a local prefectural government. From the first day that we opened our doors we have stood apart from other Japanese public universities in many aspects: All courses at AIU are taught in English; all freshmen are required to live on campus in the dormitories; all AIU students are required to study abroad for one year.

AIU's focus is on international liberal arts and our ties to other institutions around the world help nurture the fundamental aim of the university to produce future leaders who will contribute to world peace. As of March of 2011, AIU has ties to 118 Partner Institutions in 35 countries and regions throughout the world. For the calendar year of 2010, AIU welcomed 202 international students to our campus. Each semester the number of international students we receive continues to increase. What we have created on our campus is a truly international experience. Students from Japan and from around the world participate in a daily intercultural communication and exchange of ideas, beliefs, and opinions—both in and out of the classroom. An effect of such an intercultural exchange of ideas with their peers has led AIU students towards ever higher levels of critical insight and investigation. It is the fruit of such intellectual explorations that we wish to share through this journal.

The impetus behind the creation of this journal was the belief that we, as faculty members here at AIU, had in the writing, critical thinking and talent of the students that we welcome into our classrooms each semester. The goal of this journal is to put control of the distribution of AIU undergraduate students' best writing into the hands of the students themselves.

This journal is student-directed. From vetting submissions to advising selected authors in revision to final production, the work has been that of undergraduate students. We have merely served as faculty advisers ready to offer advice when solicited.

Finally, a word of gratitude must be given to AIU's president, president Mineo Nakajima, for his foresight in supporting this endeavor in its infancy and for continuing to support it by providing the funding for this second edition through a university President's Research Fund grant.

Each paper printed here can be seen as an opinion offered to and as intentionally part of, an ongoing discussion. The student journal aims in the future to open the publication to students worldwide to become a place in print where international liberal arts can be celebrated, examined and enriched. We welcome all readers to offer your thoughts on the ideas presented here and to join the discussion.

Laura Kobata

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# **Child Soldiers in Sierra Leone: Still No Human Rights**

**Ayaka Kimoto**

## **Introduction**

Child soldiering is one of the major issues in the world which has much to do with human rights. One striking example of child soldiering is the massive recruitment of children in the Sierra Leone civil war, 1991-2002. Vivid descriptions of the degree of cruelty of child soldiering were made known to people all over the world by Ishmael Beah (2008), whose book "A Long Way Gone", chronicles his real life story as a former child soldier in Sierra Leone. The conflict in Sierra Leone lasted for 11 years, and involved a lot of children in the fighting (Coalition, 2008). Both boys and girls, including children under the age of 15, were abducted and coerced into serving as child soldiers. Deprived of family, emotion, and home, they were brainwashed into killing innocent people in cruel ways. Many drugs were used to paralyze their feelings when killing. Although eight years have already passed since the end of the war, many former child soldiers are suffering from psychological trauma, drug addiction or emotional disorders. In addition, the end of the war did not necessarily exclude the possibility that children are still forced to serve as soldiers. This paper focuses on the issue of current undertakings regarding child soldiering and argues that they are insufficient, referring to the case in Sierra Leone, which is one of the countries paving the way of recovery from an extreme war.

One issue which has to be mentioned before embarking on the core argument is that child soldiering in Sierra Leone is not an isolated incident. A considerable number of children across the world had already been involved in child soldiering in other wars, prior to the Sierra Leone civil war, and child soldiering is still going on in some parts of the world. For example, in Iraq, under surveillance of the United States, the involvement of under 18 year-olds in the Iraqi armed forces has not been reported for the year 2003; however, the use of children as combatants in the armed political groups is still ongoing (Coalition, 2008). Basically, many armed groups in Iraq are the opponents of MNF-I (Multi-national Force-Iraq), and most of them are Sunni (Ibid.). Al-Qaeda is a striking example of such an armed group. On November 2005, a boy whose age was between 10 and 13 was used for a suicide bombing targeting the police commander, and in the same month, two boys, aged 12 and 13, were also used to

attack MNF-I (Ibid.). In more atrocious cases, there are a few reports of Al-Qaeda's use of mentally disabled children as tools for attacks. In one of the attacks in 2007, for the purpose of making it easy to pass through the check point on the way, mentally disabled children were taken to a target location in the back of a car; the car was bombed and the two children were blown up with the car in the end (Coalition, 2008). Although children's human rights are supposed to be protected by the Convention on the Rights of the Child (CRC) (OHCHR, 2002), their rights are de facto not ensured and respected across the world. There is a need for a global-scale law that stops child soldiering and secures aid to reintegrate former child soldiers into society so as to help them retrieve their basic human rights. This law should apply to all countries. Three major issues need to be addressed: Article 38 of the CRC, the rehabilitation for child soldiers, and the Disarmament, Demobilization and Reintegration (DDR) program.

### **Article 38 Should Be Modified**

According to estimates by different organizations, including the United Nations Children's Fund (UNICEF) and the United Nations Mission in Sierra Leone (UNAMSIL), the number of children involved in conflict amounts to from 5,000 to 10,000 (Coalition, 2008). According to UNICEF (1990, p. 1), a child soldier is defined as "any person under 18 years of age who is part of any kind of regular or irregular armed force or armed group in any capacity". Article 38 of the CRC prohibits anyone under the age of 15 from directly participating in hostilities and serving in the armed forces (OHCHR, 2002). However, Article 38 does not illegalize the voluntary recruitment of children between the ages of 16 and 18 by the armed forces (UNESCO, 2006). This implicitly allows a person under the age of 18 to join armed conflicts on the condition that it is his/her "own will." However, what if a person under 18 is willing to serve in the armed forces simply in order to support his or her family? Should it be regarded as "voluntary?" If it should, is it a violation of human rights?

Article 38 includes an ambiguous statement which is likely to be perceived as tacit permission of recruitment between the ages of 16 and 18. Article 38 should be modified so not one single person under the age of 18 can join the military under any condition. In fact, a number of countries, including Sierra Leone, have already set the minimum age of not only compulsory but also voluntary participation in the armed forces at 18 or older (Coalition, 2008). This will prevent children between the ages of 16 and 18 from joining the armed forces due to possible indirect external pressure. However, on the other hand, some countries such as Australia, New Zealand and the U.K. are obstinately opposed to raising the minimum age of voluntary participation



to 18 for the reason that it narrows the range of available recruits (Coalition, 2008). According to Harvey (2002, p. 1):

We believe it continues to be important to recruit young people straight from school, including at the age of 16; if they are not caught at this point, they are likely to take up other careers and be permanently lost to the Armed Forces.

### **The Responsibility of Rehabilitation**

The war in Sierra Leone forcibly recruited thousands of innocent children and coerced them to participate in mass killings. There was no morality or ethic to the war. The Sierra Leone civil war started with an uprising of a group of men called "The Revolutionary United Front" (RUF) (Bureau of African Affairs, 2010). RUF is known as having the highest rate for recruiting children under the age of 15 during the war, which accounts for 50% of forced recruitment, and more than 28% were under the age of 12 (Coalition, 2008). These children were indoctrinated to kill people for fabricated reasons. Since children tend to be docile and obedient, it was relatively easy to manipulate them. Given only basic instructions in how to use bayonets, guns and grenades, children were rushed into being made to kill without enough preparation. RUF is also notorious for brutal massacres, making child soldiers inhumanely kill innocent people, including the cutting off of limbs (Tafirenyika, 2001). Given drugs to motivate them to kill people, children were forced to dull their emotions or consciences. Beah (2007, pp. 122-126) vividly describes his childhood as a soldier in Sierra Leone in his documentary book:

I took turns at the guarding posts around the village, smoking marijuana and sniffing *brown brown*, cocaine mixed with gunpowder, which was always spread out on the table, and of course taking more of the white capsules, as I had become addicted to them. They gave me a lot of energy.... My squad was my family, my gun was my provider and protector, and my rule was to kill or to be killed.... We had been fighting for over two years, and killing had become a daily activity. I felt no pity for anyone.

The war deprived children of humanity, identity, and morality, much less human rights. Unable to get their humanity back, many former child soldiers are still struggling. Article 39 of the CRC stipulates that member countries are obliged to strive to protect children's physical and psychological recovery and social reintegration

(OHCHR, 2002). There is a serious need for rehabilitation centers which help to improve children's lives and help children become part of society.

### **Disarmament, Demobilization and Reintegration**

For over fifteen years, the United Nations has been involved in a Disarmament, Demobilization and Reintegration (DDR) program. The purpose of the DDR program is to improve the conditions after a conflict in order to launch recovery and development (DPKO, 2009). The United Nations defines DDR as:

- (1) the collection, documentation, control and disposal of small arms, ammunition, explosives and light and heavy weapons of combatants and often also of the civilian population;
- (2) the formal and controlled discharge of active combatants from armed forces or other armed groups; and,
- (3) "the process by which ex-combatants acquire civilian status and gain sustainable employment and income." (DPKO, 2009)

Since the year of 2004, DDR has succeeded in releasing tens of thousands of children (Coalition, 2008). According to the National Committee for Demobilization, Disarmament and Reintegration (NCDRR), more than 6,774 children who were involved in the Sierra Leone civil war joined the DDR program (Ibid.). Allegedly, girls account for 30% of child soldiers in the conflict, but females in the DDR program account for only 8% of the former child soldiers (Ibid.). DDR offered three reasons for this: (1) girls had been regarded as "camp followers" and not as combatants; (2) some commanders do not permit girls who are "bush wives"<sup>1</sup> to enter the DDR program; and, (3) girls reject DDR for fear of criticism (Coalition, 2008). BBC (2006) reports that while boys could give back their weapons when asked in order to get into a facility or program, most girls could not because, as they were used as cooks, porters and "bush wives" which involved sexual slavery, they had no weapons to give back. An estimate by Physicians for Human Rights says that 64,000 women and girls were sexually abused by rebels or the armed forces in the Sierra Leone civil war (BBC, 2006). Coalition (2008) points out that half of the targets of sexual abuse by RUF and the Armed Forces Revolutionary Council (AFRC) were girls 12 years old or younger. Disproportionately, there are still a number of girls who are not able to join the DDR program because of the reasons mentioned above. Their human rights have not been

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<sup>1</sup>The girls and women who were kidnapped, raped and forced to "marry" combatants and bear their children.

realized even after the war, which especially indicates that the DDR program has yet to assist girls. The absence of girls in the DDR program is a critical issue which should be seriously tackled to protect girls from being sexually abused, infected with HIV/AIDs and coerced into slavery.

## **Conclusion**

Although UNICEF, UNAMSIL and other organizations have been engaging in the eradication of child soldiering full blast, such efforts seem to be inadequate. The number of child soldiers in Sierra Leone decreased with the end of the war, and with the start of the DDR program, but there are still many unknown numbers of unreleased children, especially girls. The abolishment of sexual exploitation, housework slavery and military assistance, which target mostly girls, should be promoted not only on the regional level but also on the national level. In addition, the protection of girls should be prioritized in the DDR program. It is true that many released former child soldiers are in need of rehabilitation. Some children will need long-term counseling, especially those who suffer from persistent psychological trauma as the result of experiencing unforgettably gruesome fighting or excruciating rape. In accordance with article 39 of the CRC, children are entitled to get some kind of care and assistance to facilitate their return to society. Unfortunately, however, the CRC to date seems to be insufficient to protect children's human rights. The issue of the voluntary recruitment of children aged 16 to 18 is very controversial, and it seems to be difficult to set the minimum age at 18 since Article 38 of the CRC permits children between 16 and 18. However, at least, for the sake of completely eradicating child soldiering under the age of 18 and absolutely guaranteeing children's human rights, the establishment of an internationally agreed law is needed so that countries can deter violations for and with each other. Along with the law, a more sufficient policy, such as compulsory participation in the DDR program, for not only boys who directly joined the war, but also for girls who were affected by the war in some way, should be enacted.

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# Mongolia's Search for Security

Bayartsengel Damdinjav

## Introduction

Since the end of 19<sup>th</sup> century Mongolia has been trying to regain its lost independence, exercise its sovereignty and enjoy full independence. In retrospect, the entire 20<sup>th</sup> century was a century of Mongolia's struggle for international recognition as an independent state which can exercise full sovereignty (Batbayar, 1999). Thus, in 1911, it declared its independence from the Manchu dynasty and also declared its willingness to establish diplomatic and other forms of relations not only with its immediate neighbors—Russia and China—but also with Japan, the U.S. and other countries. However, due to geopolitical realities and a tacitly divided sphere of influence, the major powers were not prepared to recognize Mongolia's full independence (Bawden, 2002).

Numerous diplomatic maneuvers and initiatives—including sending delegations to Russia—and official letters to the U.S. and Japan were not successful. At long last, in 1915, Mongolia had to settle for a vague form of autonomy negotiated between Russia and China and imposed upon Mongolia as a *fait accompli*, with some Mongolian territories going to its neighbors (Baabar, 1999). The two neighbors recognized Mongolia as an autonomous part of China under Russia's influence. This action was the first practical result of its policy of survival as an independent country. However, throughout the past century Mongolia's security and independent status was part of or subordinate to Sino-Russian, or Sino-Soviet, relations.

It is only through a radical revolution in Soviet Russia and its external environment that Mongolia was able to turn to Russia for recognition of sovereignty and to establish diplomatic relations. Though full diplomatic relations were established only in the early 1950s after China's recognition of Mongolia, in 1919, Russia had established formal relations with Mongolian nationalists who were planning to declare full independence from the Manchu dynasty. According to Baabar (1999), Russia's geopolitical calculations led its government to support Mongolian nationalists in their resolve to drive the Chinese out of Mongolia and to reassert a degree of independence.

Though supportive of Mongolian nationalists' aspirations for independence from China, the new Russian leaders did not support Mongolia's full independence, but rather anticipated Mongolia would have only close relations with, and a dependence on, the Soviet Union. Moscow was playing a double game—a policy of double-dealing—which explains the Soviet policy of refraining from according full-scale diplomatic recognition to Mongolia and recognizing its full independence until the end of World War II.

Thus, although the Soviet Union recognized Mongolian sovereignty, it exchanged diplomatic representatives only at the level of envoy. The first treaty the Soviet Union concluded in 1921 was not with the Mongolian state, but with the government in power. Besides this fact, while supporting Mongolia's adoption of its first Constitution, which the Soviet Union itself co-authored, the Soviets were at the same time secretly negotiating an agreement with China in which Article Five stipulated that the Soviet Union "recognizes Outer Mongolia as an integral part of the Republic of China, and respects China's sovereignty therein" (Batbayar, 1999, p. 191). This political movement of the Soviet Union indicates that it was playing a double game. The Soviet Union promised to withdraw its troops from Mongolia after negotiating a forthcoming border conference in the agreement. The treaty was signed in May 1925, without the Soviets officially notifying Mongolia. The main purpose of the Soviet Union's act was, in fact, to impose control over a Sovietized Mongolian puppet state, with the dominating role to be played by Russia.

In the mid-1930s, the Soviets found themselves surrounded by the Axis powers, including Japan in the East, which had just invaded part of East China and set up the puppet state of Manchukuo (Kenez, 2006). The Japanese plan was to cut off Russian supplies in Siberia by invading Mongolia. At that point, Soviet Russia concluded a bilateral protocol (1936) whereby Russia placed its troops in Mongolia to prevent a Japanese occupation of Mongolia and parts of Soviet Russia. China protested Russia's conclusion of the protocol with Mongolia, denouncing it as a gross violation of the 1925 agreement.

During World War II, Mongolia firmly sided with the Soviet Union, and also with the Allied Powers, actively and materially contributing to efforts to fight common enemies in Europe and in Asia. As a result of Mongolia's contribution, the Allied powers in Yalta in 1945 finally agreed to recognize Mongolia's de facto status quo. The Mongolian people also supported such a status in a national referendum in 1945. In October 1945, the Mongolian people overwhelmingly cast their votes in favor of

full independence, a fact that the Republic of China could not ignore (Baabar, 1999). On January 6, 1946, the Executive Yuan of the Republic of China officially recognized Mongolia's full independence. However, later in the same year, the Republic of China used a border incident as a pretext to break the promise of recognizing Mongolia's independence. When the United Nations was established in 1945, Mongolia applied for membership. However, due to different excuses by the Republic of China and other western powers, its desire to become a member of the U.N was rejected several times prior to 1961.

### **"Security" amidst Ideological Dispute**

In 1949, when the Communist People's Republic of China (PRC) was declared, Mongolia was one of the first countries to recognize it. Later in same year, Mongolia established diplomatic relations with it and exchanged ambassadors. However, Baabar (1999) notes that even the establishment of full diplomatic relations was not enough for the PRC to accept Mongolia's independent existence. In 1954, China broke its promise and the Chinese leaders secretly approached the Soviets and demanded that Mongolia be returned to China (Bawden, 2002). The Mongolian leadership, again, learned of this a few years later when the Sino-Soviet conflict intensified and both sides began attacking each other through the media. By the mid-1950s, Mongolia seemed to be beginning to enjoy good relations with both of its neighbors and there was even economic competition to invest and build in Mongolia. But all of those situations came to an abrupt end in early 1960, due to a Sino-Soviet conflict. Each neighbor was demanding that Mongolia adhere to its ideological line. Mongolia was forced to take sides in an increasingly ideological dispute although it had little to gain from the debate. Conscious of past experience with Russia and China, as well as the amount of assistance that the Soviet Union could provide, the Mongolian leadership opted to support Russia (Batbayar, 1999, p. 111). Due to Mongolia's decision, China immediately withdrew its workers and halted assistance.

On the other hand, Mongolia also tried to use the China card to increase Soviet aid. Soon the Soviet Union increased the volume of its assistance as well as political pressure to fully and unequivocally back its position regarding the Sino-Soviet dispute, which by that time was turning from an *ideological to interstate* discourse, covering all the areas of interstate relations, including trade and investment. Following the rise in Sino-Soviet tensions, not only did Soviet troop level reach 120,000, but also Mongolia's own armed forces were doubled. Participation in a possible conflict with China was on the minds of many Mongolians (Altanhuyag, 2006).

Thus, since the early 1960s until 1989, when Sino-Soviet relations renormalized, Mongolia was firmly aligned with the Soviet Union. As an ally, it had to follow the Soviet line in domestic and foreign policies. As a result, its trade with China fell below 5%, while its trade with the Soviet Union reached almost 90% (Bawden, 2002). In 1966, based on the renewed alliance treaty, Mongolia allowed Soviet troops to be stationed on its territory until the Sino-Soviet renormalization occurred. The Soviet troops equipped with weapons of mass destruction were stationed in Mongolia until 1992. Enkhsaikhan (2000) mentions that, in the late 1960s, when the Sino-Soviet conflict was becoming a potential flashpoint, the Soviets considered the idea of making a preemptive nuclear strike against Chinese nuclear installations and targets, including the use of Mongolian territory as a forward base. It was later known that the Soviets even unofficially approached the U.S. regarding its possible reaction to such a preemptive strike. According to Enkhsaikhan, the U.S. did not support the idea, which meant that Mongolia was spared from becoming a nuclear preemptive launch pad and, if the Chinese had retaliated, an eventual battleground for exchanges.

### **Distant Hopes of Neutrality**

In the mid 1920s, when Mongolian nationalists were debating what kind of policy to pursue as an independent state, the elite were divided, according to Bawden (2002). Some thought that Mongolia's destiny was tied to the emerging Soviet State, while others were more sympathetic with a rising Japan. There were also those who thought that it would be in the country's interest if it could become permanently neutral and not take sides in disputes between its two neighbors—Russia and China. However, political realities demonstrated that, in times of overt political rivalry among great powers, a small, isolated country could not survive as an independent country without aligning itself with one of the regional powers or becoming a member of a regional concert of powers (Baabar, 1999).

During the East-West cold war, as well as the Sino-Soviet cold war, Mongolia could not realistically pursue a neutral foreign policy. The principle that was applied was "either you are with us or against us." The rigorous conditions set by the realities of the double cold wars began to change at the end of 1980s, when Sino-Soviet relations began to normalize and Mongolia was able to normalize relations with both countries. Also, the United States finally recognized Mongolia in 1987. This international political change provided an opportunity to redefine its foreign policy.



The changes in international relations in the early 1990s, such as the disintegration of the Soviet bloc followed by the fall of the Soviet Union, provided an opportunity for Mongolia. As for many other countries, Mongolia was able to free itself from Soviet influence, to redefine national security and foreign policy priorities, and to formulate its national security and foreign policy concept based on its own interests. These concepts were reflected in the new 1992 Constitution of Mongolia as well as in its foreign policy premises.

### **Basic Principles of a New Foreign Policy**

According to the national security principles of Mongolia, Mongolia declared that its future foreign policy objectives would be to ensure its independence and sovereignty by following the trends of human advancement and made clear that it would pursue an open, non-aligned foreign policy. It also declared that Mongolia would avoid past patterns of becoming overly reliant on any one country or group of countries. Bearing in mind its own foreign policy objectives and its comparative advantage, Mongolia declared that it would give priority to safeguarding its security and vital national interests primarily by political and diplomatic means and by creating a favorable external environment for its economic, scientific and technological development.

Conscious of its geographical location and historical experience, Mongolia declared that its priority would continue to be relations with its immediate neighbors—to maintain a balanced relationship with both—and to develop all-round good neighborly cooperation. The government explained that maintaining a balanced relationship did not mean keeping equidistance from, or taking an identical position on, all issues, but meant strengthening trust and developing good relations with both powers. The national security principles of Mongolia (1992) stated that, when dealing with neighbors, due account would be taken of their policies in regard to the vital national interests of Mongolia. It was specifically emphasized that a policy of non-involvement and neutrality would be pursued in relation to any disputes that might arise between the two neighbors, unless they directly affected Mongolia's national interest, in which case it would follow its vital interests.

Bearing in mind past experiences with its immediate neighbors, or Soviet bloc countries, Mongolia declared an open foreign policy in 1990. Thus, the second priority of its foreign policy was aimed at developing friendly relations with highly industrialized developed countries of the East and West. It openly declared that it would pursue a non-aligned policy as long as that did not threaten the country's national vital

interests. The third direction was to promote relations and strengthen its position in Asia, especially northeast and central Asia.

### **First Step toward Active neutrality**

One advantage of Mongolia's policy of neutrality with respect to disputes of its immediate neighbors lies in the fact that the policy coincided with the declared policies of its neighbors. In the early 1990s, Russia and China publicly pledged not to use neighboring territories against each other (Kenez, 2003). These commitments by Russia and China were welcomed by all their neighbors, as well as other regional powers, and by the international community as a whole. For its part, when Mongolia concluded treaties of friendly relations and cooperation with Russia (1993) and China (1994), it pledged not to allow other countries to use Mongolia's territory or airspace against interests of third countries. In return, both neighbors have expressed support for Mongolia's independent and balanced foreign policy, as defined above, especially its commitment to not allow the stationing or transit of weapons of mass destruction through its territory. Mongolia (1992) declared its territory a single-state nuclear-weapon-free zone as an important part of its security policy, and as an essential element of ensuring its neutrality in future Sino-Russian disputes. Currently, this policy enjoys the wide support not only of its neighbors, but also of the region and the world. In 1998 (Resolution 53/77 D), the United Nations General Assembly welcomed "Mongolia's active and positive role in developing peaceful, friendly and mutually beneficial relations with the states of the region and other States" (U.N. Resolution 53/77D, p. 5) and expressed the conviction that (Ibid.):

...the internationally recognized status of Mongolia will contribute to enhancing stability and confidence-building in the region as well as promote Mongolia's security by strengthening its independence, sovereignty and territorial integrity, the inviolability of its borders and preservation of its ecological balance. (p. 5)

The Assembly further endorsed and supported "Mongolia's good-neighborly policy and its balanced relationship with its neighbors as an important element of strengthening regional peace, security and stability" (U.N. Resolution 53/77D, p. 5).

General Assembly Resolution 53/77 D, mentioned above, has demonstrated not only recognition of the international status of Mongolia. It also showed that its foreign policy has matured to a degree that its policy of neutrality and non-involvement is

recognized as an important element of strengthening regional peace, security and stability. This international recognition has laid the foundation to further expand Mongolia's policy of neutrality beyond Sino-Russian disputes or other Sino-Russian relations. It could also cover relations with other countries of the region, especially relations with regional powers.

### **Essence of the Nuclear-Weapon-Free Status**

Mongolia's nuclear-weapon-free status is essentially an expression of its rejection of the nuclear policies of great powers, and of nuclear proliferation; at the same time, Mongolia's status is a manifestation of its desire for neutrality and non-involvement in nuclear power rivalries or calculations by not only Russia and China, but by all nuclear-weapon states. When Mongolia's single-state NWFZ status is internationally recognized and legally guaranteed, it will, in fact, define its internationally accepted regime with all the benefits that come with NWFZ status, including: security assurances more rigid than Nuclear Non-Proliferation Treaty (NPT) verification and support in peaceful uses of nuclear energy and science. As such, it could also serve as an example for other states which, due to their geographical or geopolitical location, cannot establish themselves as traditional NWFZs. According to Enkhsaikhan (2000), at present, some nuclear weapon states hesitate to accept in principle the notion and concept of a single-state NWFZ, since they believe that that would detract from or undermine the incentive to establish a traditional NWFZ. However, there are real-life cases when a state, due to its geographical location, or for some geo-political considerations, cannot form part of a traditional NWFZ (as a group). There are also cases when a regional NWFZ cannot be established due to the fact that some potential states are under a nuclear umbrella of a nuclear weapon state and enjoy "umbrella" protection, while others cannot, or some seek the protection of alliance relations, while others do not (Mukai, 2005).

### **Mongolia's Nuclear-Weapon-Free Status—An Important Part of Security**

The right of any country to ensure its security without undermining the security of others is a well recognized fact. That especially applies to nuclear security issues. For this reason, a U.N. Comprehensive Study on the Question of Nuclear Weapon Free Zones in All Its Aspects (1975) pointed out that "obligations relating to the establishment of nuclear weapon free zones may be assumed not only by groups of states, including entire continents or large geographical regions, but also by small groups of states and even individual countries. Furthermore, in 1976, the U.N. General

Assembly expressed the hope that the foregoing study-together with subsequent views, observations, and suggestions offered on it—would further enhance whatever efforts a country or countries may take concerning NWFZs and be useful in the establishment of such zones (U.N. Resolution 31/70 1976). Mongolia is not the only country that cannot benefit from regional NWFZs. There are other states that, because of their geographical or geopolitical location, or for political or any other reason, cannot be part of regional/traditional NWFZs. Such countries like Nepal, Afghanistan, Austria, Cyprus, Ukraine, and Malta, Japan, or even the two Koreas, might have difficulties in forming part of a regional NWFZ.

The past decade has also demonstrated that the time to create "easy" NWFZs is almost over and that the establishment of NWFZs in Central Europe, the Middle East, South Asia, or Northeast Asia would need more innovative and imaginative approaches than at present (Enkhsaikhan, 2000). This is due to the fact that these proposed zones touch upon the interests of nuclear powers, who have disputes among themselves, meaning that some of them would need the actual withdrawal of nuclear weapons, dismantling or destruction of nuclear weapons or their infrastructure. In the Northeast Asian case, Mukai (2005) mentions that some states not only have competing strategic interests, but some also have foreign military bases and nuclear umbrellas. Furthermore, it seems that the United Nations Guidelines (1999) did not address the issue of the creation of single-state NWFZs. The guidelines only make reference to: "owing to its unique geographical circumstances, Mongolia has declared its nuclear weapon free status in order to promote security" (United Nations Guidelines, 1999, p. 7). This status was welcomed by the General Assembly in its consensus resolution 53/77 D of 4 December 1998. Enkhsaikhan (2000) states that at that time the nuclear powers thought that Mongolia would be most probably the only exception. But it seems that, as recent events clearly demonstrate, Mongolia is not at all—and will not be—the only exception.

Some criticism that the creation of single-state NWFZs would detract from or undermine the incentive for establishing traditional (group countries) NWFZs is unconvincing and in fact unproductive. It seems that it discriminates against individual states and violates their right to ensure security through political and legal means. According to Enkhsaikhan (2000), in most cases, security lies in numbers and not vice versa. Therefore, single states need more assurances than groups of states.

As a result of Mongolia's adoption (2000) of a law defining its nuclear weapon free status, and diplomatic negotiations held during 1997-2007, the five nuclear weapon

states (P5) made a joint statement (The Joint Statement, October 2000) providing political security assurances to Mongolia. However, according to Enksaikhan (2000), political assurances were not sufficient to institutionalize Mongolia's status. Therefore, the P5 non-governmental experts, Mongolia, and representatives of the United Nations met in Sapporo to address the issue of Mongolia's status and recommended that in order to make the status more credible and legally based, Mongolia and its two neighbors, or Mongolia and all P5 nations, needed to conclude an agreement institutionalizing that status. This process continues to take a long time and no further development has been seen in institutionalizing Mongolia's status as a single-state nuclear weapon free country, although its two immediate neighbors have agreed in principle.

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# **Japan's Export of Nuclear Technology : Examining Vietnam's Case**

**Chika Harada**

## **Introduction**

In Japan, as well as other developed countries, the export of nuclear technology has attracted attention not only from the government, but also from Japanese enterprises in various fields. Since Japan will be one of the countries that will be actively involved in nuclear power sources, especially for the East Asian region, it is significant for the younger generation to be informed of the Japanese government's policy toward nuclear exports and also the nuclear policy of those countries that are importing nuclear technology from Japan. In addition to that, it is also important to know how international organizations such as the NSG (Nuclear Suppliers Group) and the IAEA (International Atomic Energy Agency) have set rules for nuclear technology exports for safer and continuous energy supplies in the region.

In my paper, I will discuss and analyze three main points in terms of Japan's export of nuclear technology as following:

- 1) The background to the export of nuclear technology
  - The recent world trend
  - NSG Guidelines and IAEA Safeguards Agreement
  - IAEA Guidelines and ASEAN countries
- 2) The Japanese government's policy to export nuclear technology
  - History of Japan's nuclear development and policy
  - Japan's 3S diplomatic policy from 2008
  - Policy for recent nuclear export
- 3) Case study: Japan's nuclear corporation with Vietnam
  - The Vietnamese government's ambitious attitude toward nuclear programs
  - Factors in Japan's victory over France and South Korea
  - Some concerns

Then I will conclude my paper with a discussion on possible problems that Japan and other countries are going to face, including the safe use of nuclear technology.

## **Background to the Export of Nuclear Technology**

### *The recent world trend*

Nuclear technology has been attracting more and more attention from countries all over the world. According to a report written by the JAIF (Japan Atomic Industrial Forum), there are 140 nuclear reactors which are under construction or under negotiation, which are 22 more than that of last year (*Nikkei Shimbun*, April 13, 2010). One of the reasons for this is growing demand for energy in developing countries, such as the UAE and Turkey in the Middle East, and China and Vietnam in East Asia. However, it is not that those countries by themselves are developing nuclear technology or constructing nuclear reactors. Developed countries, such as Japan, Korea, the U.S., Russia and France are now enthusiastically exporting their nuclear technology to other countries.

In the East Asian region, there are 90 nuclear reactors in operation; 53 in Japan, 20 in South Korea, 11 in China and 6 in Taiwan. China is now planning to build 36 more nuclear reactors, which is three times more than that of five years ago (Sagara, 2009). As far as Southeast Asian countries are concerned, there are no nuclear reactors in operation. However, among the ASEAN members, all countries except Brunei and Laos are now in the process of consideration for importation of nuclear technology (*Forbes*, 2010). Vietnam is the country that is most actively promoting the construction of nuclear power plants. Japan seems to attach a great deal of importance to nuclear cooperation with Southeast Asian countries.

### *NSG Guidelines and IAEA Safeguards Agreement*

When a country exports nuclear technology to other countries, they should follow the guidelines provided by the NSG. The NSG is a group of nuclear supplier countries, which seek to contribute to the non-proliferation of nuclear weapons through the implementation of guidelines for nuclear exports and nuclear related exports. A set of these guidelines is called the NSG Guidelines. The materials and technologies which are on the trigger list of the NSG Guidelines are source materials such as plutonium, natural uranium, depleted uranium and thorium, and also nuclear reactors and equipment which includes complete nuclear reactors, fuel charging machines and heat exchangers (Nuclear Suppliers, 2007). Non-nuclear materials such as deuterium, heavy water and plants for the reprocessing of irradiated fuel elements are also listed in the guidelines.



The NSG guidelines provide that suppliers should transfer trigger list items to a non-nuclear weapon state only when the receiving state has reached a Comprehensive Safeguards Agreement with the IAEA. It also requires the application of safeguards on every source of special fissionable material in its current and future peaceful activities. Considering the non-proliferation principle of IAEA, suppliers authorize transfer of items only when they are satisfied that the transfers will not contribute to the proliferation of nuclear weapons or be diverted to acts of nuclear terrorism (Ministry of Foreign Affairs, 2010).

Under the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), the IAEA established guidelines for a nuclear non-proliferation procedure that is applied not only to simple nuclear power plants, but also to complicated fuel cycles (concentrating and processing of uranium, a series of systems for production and disposal of nuclear reactor fuel). According to the guidelines of the IAEA (International Atomic, 2007), each country concerned should conclude a non-proliferation agreement with the IAEA and report information about all nuclear materials and nuclear facilities prescribed in the agreement.

#### *IAEA Guidelines and ASEAN countries*

According to the Southeast Asian Nuclear-Weapon-Free Zone Treaty, ASEAN countries have to get confirmation from the IAEA and other ASEAN countries when they utilize nuclear energy for a peaceful purpose (*Forbes*, 2010). In addition to that, ASEAN countries should conclude bilateral agreements with nuclear supplier countries, such as Japan, the U.S., France, Russia and Canada, in order to import nuclear reactors, nuclear fuels and technology (*Ibid.*). In this process, ASEAN countries should show the commitment to follow the international rules for non-proliferation, the safe use of nuclear energy and nuclear security.

### **The Japanese Government's Policy to Export Nuclear Technology**

#### *History of Japan's nuclear development and policy*

The very first nuclear reactor in Japan started operation in 1966, and it has the longest history and experience of nuclear technology in the East Asian region. Although Japan had been developing nuclear technology, the mass destruction of the nuclear research center during the war, and the prohibition on nuclear research and development by the Far Eastern Commission after the war kept Japan away from nuclear

development for a while. However, after President Eisenhower's "Atoms for Peace" statement, Japan became involved once again in nuclear development.

In 2005, Japan announced its policy to build an international cooperation system of nuclear safety in Asia. "A Plan for Nuclear Nation" established in 2006 (The Japanese Cabinet, 2006) promised Japan's commitment as the only nation who was subjected to an atomic-bomb attack during WWII to not only expand their nuclear industry to other countries but also to maintain nuclear safety and non-proliferation in the world.

### *Japan's 3S diplomatic policy from 2008*

At the G8 summit in Hokkaido on July 2008, Japan announced its new policy toward an international initiative for nuclear energy. The diplomatic policy known as 3S means nuclear non-proliferation and Safeguards, nuclear Safety and nuclear Security (Ministry of Foreign Affairs, 2008). Since then, Japan's nuclear diplomatic policy has not changed. According to the 3S diplomatic policy, Japan has concluded the agreement for bilateral nuclear cooperation with 10 countries, such as Kazakhstan and Indonesia in 2007, Vietnam in 2008, the UAE and Italy in 2009, and Poland and Malaysia in 2010 (Nikkei Shimbun, September, 2010). Japan has been requesting those countries to sign an additional agreement with the IAEA in order to strengthen both the international framework and bilateral relationship.

### *Policy for recent nuclear export*

These days, the Japanese government is keen on gaining a firm foothold in the exportation of nuclear power plants, especially to Southeast Asia and the Middle East. Aiming at those countries that are getting ready to import nuclear power plants, Japan has been actively involved in negotiation for nuclear cooperation. Japan Business Foundation proposed the "PPP (Public-Private Partnership)" method for Japan's export of infrastructure oversea (Nikkei Shimbun, August, 2010), including the export of nuclear power plants. It means the Japanese government decided to cooperate more with Japanese companies to export infrastructure utilizing ODA (Official Development Assistance). On June 2010, the government announced that they will expand the market for infrastructures up to about 19.7 trillion yen (US \$234.1) until 2020 (Ibid.).

Two major actions since the announcement are the establishment of JINED (International Nuclear Energy Development of Japan Co., Ltd) and the new system

of JBIC (Japan Bank For International Cooperation). JINED is a newly established company who will be a liaison for Japan's nuclear exports oversea. This is a joint contribution company invested in by 9 electric power companies such as the Tokyo Electric power company, and 3 nuclear power plant makers such as Toshiba, Hitachi and Mitsubishi Heavy Industries (*SankeiBiz*, 2010). Regarding the JBIC, the Japanese government is developing a new system for them, through which they can use the state-owned foreign currency reserves when they finance Japanese enterprises who will export the infrastructure (*Sanyo Shimbun*, 2010).

### **Case Study: Japan's Nuclear Corporation with Vietnam**

The best example of Japan's change in nuclear policy actually working is Vietnam's selection of Japan as its partner for cooperation in the construction of nuclear power plants. On the 31<sup>st</sup> of October, 2010, when Japanese Prime Minister Naoto Kan and Vietnamese Prime Minister Nguyen Tan Dung met, they signed an agreement that Japan would be the cooperative partner in a Vietnamese project to construct a second nuclear power plant in the southern Ninh Thuan province (*World Nuclear News*, 2010). The nuclear reactor construction agreement, worth an estimated 1 trillion yen (U.S. \$14.4 billion), gives the green light for Japanese companies to build nuclear facilities in an emerging nation's fledgling nuclear industry for the very first time.

The types of nuclear reactor and nuclear fuels are still under negotiation between the JINED, the Japanese company discussed earlier, and the Vietnamese government and local companies. However, since the Vietnam Atomic Energy Commission has been negotiating with nuclear supplier countries to provide them with the latest PRW (Pressurized Water Reactor) (*Sankei News*, 2009), it is considered highly likely that they will build the PRW. Mitsubishi Heavy Industries, which is an investor in JINED, has specialized in building the PRW. Another possibility is the BWR (Boiling Water Reactor), since this is the specialty of Toshiba and Hitachi (*Asahi Shimbun*, 2010).

#### *The Vietnamese government's ambitious attitude toward nuclear programs*

The Vietnamese government approved a nuclear power development plan in 2007, aiming for a 2000 MWe (megawatts of electrical output) nuclear power plant to be online by 2020, and a general law on nuclear energy was passed in mid 2008 (*World Nuclear News*, 2009). Since then, Vietnam has signed nuclear cooperation agreements with Japan, Russia, France, South Korea and the U.S. According to their master plan for the introduction of nuclear energy, the country will introduce nuclear energy

through a three-phase program. In the initial phase, between now and 2015, Vietnam will approve investment and locations, select contractors and train managers and technicians. In the second phase, between 2015 and 2020, the country will finalize construction and put into operation the first 1000 MWe reactor at Phuoc Dinh in the southern Ninh Thuan province. During the third phase, between 2020 and 2030, Vietnam wants to construct 13 additional power reactors (*World Nuclear News*, 2010).

Talking about treaties and agreements which Vietnam has signed and also the international organizations it has joined, Vietnam joined the IAEA membership in 1957, and ratified the NPT in 1982. They also signed the Comprehensive Safeguards Agreement with the IAEA. However, there are some concerns as well. Although the Vietnamese government has signed an additional agreement with the IAEA which is recommended to be signed to give stronger authority to the IAEA to investigate their nuclear program, the agreement has not been ratified yet (Nuclear Nonproliferation Science & Technology Center, 2010). On the other hand, Japan, who will be the exporter of nuclear technology to Vietnam, already signed the agreement in 1999. Another concern is that Vietnam hasn't joined the NSG yet, whereas Japan also joined the NSG in 1974.

#### *Factors in Japan's victory over France and South Korea*

Before Japan secured the order from Vietnam, it was competing with other countries such as Russia, France and South Korea over independent rights for negotiation. However, at the beginning of 2010, Japan was defeated by Russia over the first nuclear power plant in Vietnam. It was then that the Japanese government changed their attitude towards nuclear power plant exports and began working out countermeasures.

The first factor in Japan's victory is the "Top-sales" method. Unlike Russia and South Korea where the top leaders of the nation promote their nuclear industry to other nations, Japan was once reluctant to use that method. It was Japanese companies that had to struggle to promote their products. However, learning from those countries, Naoto Kan, the Prime Minister of Japan, started to be an active "sales man" of the Japan's technology and products of infrastructure. Also, the PPP policy made it easier for the government and companies to cooperate more with each other, as the effectiveness of JINED is now highly appreciated.

The second factor is that Japan tried to meet the conditions that Vietnam had set out, such as assistance in conducting feasibility studies for the project, low interest and

preferential loans for the project, the use of the most advanced technology with the highest safety standards, and cooperation in the waste treatment and stable supply of materials for the whole life of the project. In addition to that, Japan offered other advantages to Vietnam. For example, Japan intends to provide 79 billion yen (U.S. \$979,000) in ODA for five projects, including the Lach Huyen Port Complex in the northern port city of Hai Phong. In addition, the Japanese government decided to consider assisting in the construction of Long Thanh International Airport, the Ninh Binh-Bai Vot Expressway and new subway projects in Hanoi and Ho Chi Minh city (*Vietnam News*, 2010).

Thirdly, this time Japan had a strong sense of rivalry with competitors and tried to overcome their strong points. Russia is said to have offered a cheaper price for nuclear power plants and also offered a future military cooperation such as sales of submarines (*Nikkei Shimbun*, November, 2010). To fight against this, Japan suggested to Vietnam that it let Japan build the latest thermal power station and other infrastructures as a set. France has strength in recycling nuclear fuels, but Japan promised Vietnam a sustainable supply of nuclear fuels. For Korea, which offered the cheapest price for the project and guaranteed its safety, Japan decided to finance the project with a low interest rate, up to 85% of the total cost. In this way, Japan prevailed in the end (*Chuo Nippo*, 2010).

### *Some concerns*

Although Japan promised Vietnam to maintain safety operations for nuclear power reactors and to be responsible for the waste treatment, including spent nuclear fuels, there are some uncertainties as well. In Japan, people's faith in nuclear facilities has wavered because of negligent daily inspections done in some facilities and troubles with local people. Japanese citizens' worries over earthquake-resistance of facilities and exposure to radiation have increased. Despite the loud calls for the safety of nuclear facilities even within the country, it is still questionable whether or not Japan can maintain safety standards in Vietnam, where people have little technology and experience with nuclear facility operation.

### **Conclusion**

Global demand for infrastructure, including nuclear power plants and high-speed railway networks, has been steadily increasing. Japan's chronically low birthrate and aging population will inevitably cause domestic demand for infrastructure to shrink in

the future. This makes overseas markets all the more important. The forthcoming contract with Vietnam concerning nuclear facilities is a significant step forward. Ministers of the Kan Cabinet have been actively working on foreign governments to help Japanese firms win projects overseas. Securing the Vietnamese contract shows that their efforts can bear fruit. In the aspect of international cooperation and regional contribution to Asian countries, Japan will play an important role from now on.

However, it seems that Japan is desperate to seize a business chance to make money overseas more than to contribute to regional prosperity. Again, since there are still many concerns about the safety of nuclear facilities and also nuclear proliferation, Japan as well as other developed countries should examine the legitimacy of exporting nuclear technologies to developing countries. Here, the international organizations such as the IAEA and NSG need to keep an eye on recent world trends toward export and import of nuclear facilities and technology. It is also important for people to know how rules for nuclear technology export have been set for safer and continuous energy supply in the region. Nuclear energy can be very useful to improve people's lives as long as it is used in a proper way, but it also can be a threat when it is used in the wrong way.

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# **Is Genetically Modified Food Beneficial for People and the Environment?**

**Joko Suzuki**

To create new plant and animal DNA, many scientists have been combining genes as part of a science known as biotechnology. Biotechnology is very controversial around the world, especially regarding genetically modified food (GM). There are several reasons why some scientists favor genetically modified food, among them: (1) GM food can increase food output in order to reduce starvation; and (2) GM food is environmentally friendly. These reasons seem to be mere set expressions for people who agree with biotechnology. In fact, the above reasons, supported by bio-proponents, are inaccurate and questionable. In contrast to these beliefs, biotechnology is very harmful and brings unexpected results: (1) GM food does not help fight starvation; (2) GM food is not friendly to the environment; and (3) there is weak liability and economic concern caused by GM food. Therefore, biotechnology should be prohibited not only for the sake of human beings but also for the sake of the environment.

Proponents argue that, because of GM food, global food output has increased (Prakash, 2004). Spoolman (2007) claims that by the time of the first green revolution, global food production had increased about 88% since the 1950s. When it came to the second green revolution, India, China and other nations' total food production tripled. Prakash (2004) claims that because of GM technology, nations have been experiencing unheard-of totals in food production at decent prices. Furthermore, during a half century, total food production has grown twofold because of GM crops. As long as this evidence is considered, it is possible that GM food could save countless lives.

However, in spite of the second revolution, total food output has been slowly decreasing. Spoolman (2002, p. 282) argues that, "Between the 1950s and 1996, mostly because of the two green revolutions, world grain production tripled. Per capita food production increased by 31% between 1961 and 1985, but since then it generally declined." Although food output might have increased, countless numbers of people still suffer from starvation. Japan International Food for the Hungry (2009) claims that 17 people die by starvation each minute and the total number of starving people was expected to reach 10.2 billion people after 2009.

It is obvious that the main issue is not the total amount of production. The real problem is the food distribution system. There are many people who cannot get food and who face nutritional deficiency because of bad food management. And they cannot purchase food because they have little income. Complicated social and political systems deprive impoverished people of access to food. Because of these influences, many people have far less chances to own land, earn money, and obtain other resources. Therefore, there is a huge gap in the amount of food available to people. The most misunderstood fact is that many people believe that a higher population means more food is necessary (Friends of the Earth, 2003). Although there is sufficient food to meet everyone's standard nourishment, more than 2 billion people face nutritional deficiency, and hundreds of millions of people face hunger. For example, Friends of the Earth (2003) argues there are 14 million children and 18 million adults and teenagers who suffered from starvation in the United States in 1998. Even so, many opponents of biotechnology claim that GM food will not be distributed to developing nations because most GM foods go to rich nations' markets. Because almost all farmers have small amounts of land and grow various crops, many people cannot afford to purchase GM technology, which is based on a farm intensive system.

Proponents of biotechnology argue that GM food is environmentally safe. *Bacillus thuringiensis* (B.t.), which sharply reduces the amount of pesticides, is used. According to Prakash (2004, p. 360), "About 20 percent of plant productivity in the industrialized world, and up to 40 percent in Africa and Asia, is lost to insects and pathogens, despite the ongoing use of copious amounts of pesticides." Moreover, many fewer fungal toxins are included in B.t. corn, and B.t. reduces the total amount of pesticides against the bollworm and budworm. On the other hand, due to massive pesticide spraying, 400-500 cotton farmers are infected every year by extremely harmful toxins. Researchers at Rutgers University and the Chinese Science Academy claim that, instead of pesticide usage, biotechnology prevents farmers from using 75 percent of their pesticides. Furthermore, reducing pesticides implies less natural resource consumption in terms of transportation and production. For example, in comparison with non-biotechnology users, biotechnology users can produce cotton with 2.4 million less gallons less of fuel and 93 less gallon of water (Ibid.). It is true that biotechnology has some positive aspects regarding the environment.

Actually, however, biotechnology brings far more environmental risk than safety. This is because GM crops threaten wildlife. For example, Friends of the Earth (2003) argues that because of the greater appearance of GM crops, more plants and animals are endangered. About four decades ago, there were many seeds that were suitable for

agriculture. Surprisingly, these seeds have become endangered species. Plus, the various wild birds—such as the tree sparrow, grey partridge, and song thrush—have been decreasing since the 1970s. Moreover, allowing farmers to use GM herbicides will speed up the decline of wildlife. GM herbicide-tolerant crops have started to be considered on a broader spectrum because their chemicals kill not only specific harmful insects and weeds, but also kill other non-targeted species. Because of GM herbicide-tolerant crops, the only food wild life can consume are contaminated seeds.

Although the biotech industrial body created the GM agriculture manuscript, it did not explain how to preserve wildlife. GM food is being criticized by the public, various organizations, and public institutions because proponents of GM food do not consider huge potential risks. First, encouraging GM food creates an unexpected negative impact on other creatures. Last year, a laboratory study (Friends of the Earth, 2003) was published, which announced that there are higher fatality rates among monarch butterfly caterpillars due to B.t.corn. Although the butterflies do not consume the B.t.corn, if B.t.corn pollen enters milkweed plants, which are consumed by monarch butterfly caterpillars through wind movement, the result is clear: countless species are infected indiscriminately by B.t. toxins.

Also, many people remain concerned about resistant insects. If these kinds of insects increase, there will be far less effective pesticides to kill them. For example, because of the pesticide DDT, whose use is now prohibited, mosquitoes developed a resistance to DDT. Furthermore, contamination is another concern. There are many plants contaminated by GM food. This is because separating GM and non-GM crops is very difficult for farmers. For example, the plant called oilseed, which is 50 to 200m in length, has pollen that can travel more than 4 km. Friends of the Earth (2000) announced that the "Canadian exporter Advanta Seeds sent genetically modified (GM) oilseed rape seeds to the UK, Sweden, Germany and France by accident. Both Sweden and France have ordered farmers to destroy the crops." Finally, to create a pharmaceutical and industrial chemical, GM maize was used. However, in November 2002, GM maize infected more than 50% of soya. This was due to the fact that both GM maize and soya were being grown in the same agricultural fields. As a result, soybeans became the latest in contaminated crops. According to the Morrison (1999), Dr. Macfarlane argues that:

I do not see anything wrong with people having the choice of GM food. If we had a wholesale switch to organic production, the cost of food would rise by 40 percent, which is fine if you have a lot of money. But if you are already

on the headline, a 40 percent increase would be serious bad news. (p. 2)

Dr. Macfarlane also argues that there will be huge profit for both farmers and consumers if GM technology is used worldwide. In addition to this, if GM food technology is introduced, it will create a stable food supply with high quality. As a result, the market for farmers will be better.

However, accepting GM food causes two problems: (1) economic concern, and (2) the weak liability accepted by companies. There will be lengthy and huge costs to bring GM food to the market. Also, GM food companies, such as Monsanto, are not non-profit organizations. They attempt to make more profit than they invest in GM food. The biggest concern of agribusiness is that GM foods are patented by companies. If these GM foods are patented, there is a high possibility that a company will raise food prices, and as a result, many people, especially people in developing nations, will not be able to purchase GM seeds. If this were enforced, the gap between wealthy nations and impoverished nations will be more severe. Food companies should imitate the Rockefeller Foundation and make food available to starving people in acceptable ways.

In addition, responsibility is unclear and unfair. For example, there was a conflict between Canadian farmers and Monsanto. Without noticing, patented seeds were growing on a non-GM-using farmer's land through wind movement. As a result, the farmer was ordered to pay Monsanto. Although this happened unintentionally, Monsanto's claims were accepted by the Canadian court. Unfortunately, there is no way to prevent farmers from experiencing these kinds of incidents. In the EU, there is a law called "the polluter should pay." This law was established to prevent damage. In spite of many incidents caused by GM foods, which negatively affect the ecosystem, many companies avoid taking any responsibility. Friends of the Earth (2003, p. 6) claims that, "The proposed EU Environmental Liability Directive will fail to deliver satisfactory liability for GMOs." Today, there is no effective international law to make a liability rule. The Cartagena Protocol on Bio-safety started to establish an international liability, but in order to achieve it, more time is needed.

Opponents of biotechnology believe that relying on GM crops is the wrong way to proceed. Farmers, they say, should not depend on GM technology and should produce safe food for the environment. Opponents have been requiring government to use less harmful chemical substances to preserve wildlife. Friends of the Earth (2003, p. 9) propose four actions: "(1) End pesticide residues in our food; (2) support local

producers and markets; (3) give a fair deal for farmers who safeguard our future; and (4) save food and farming from unfair global trade rules." It is believed that the cause of starvation is not the amount of food available, but a faulty distribution system. To solve this problem, developing a food distribution system and a food ethics is important to feed people equally and to avoid using GM technology. For example, in India, both humans and non-humans share food based on give-and-take. Shiva (2005, p. 381) argues that, "The giving of food is related to the idea that every one of us is born in debt to other beings." Removing another species for people to meet people's food needs is wrong. Human beings have been doing this by using GM technology.

In conclusion, supporting GM technology is misdirected, for three reasons: (1) GM food does not help fight starvation; (2) GM food is not friendly to the environment; and (3) GM food producers are not legally held accountable by law in many countries for problems caused by GM farming. What human beings have to consider is not simply to increase food production, but to create a much more effective food distribution system. There is sufficient food around the world, but many people cannot get it because they cannot afford it. Also, some proponents of GM claim that GM food can reduce the total amount of pesticides currently being used. This is true; however, this will also create resistant insects. In addition, various species have disappeared because of biotechnology. For this, also, no one takes responsibility. What the general public has to do is push their governments to not use biotechnology. And finally, people have to think more about food ethics than increasing food production.

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# **Nuclear Power Generation in Japan: Public Opinion and Nuclear Education**

**Kazuyoshi Otsuka**

## **Introduction**

The peaceful use of nuclear power is recognized as an important method to achieve future development to create peace in society. The Nuclear Non-Proliferation treaty (NPT) states that, "elimination of nuclear weapons is indispensable; however, promotion of the peaceful use of nuclear power is also necessary." In Japan, even though the government is trying to promote nuclear power generation, it seems that there are obstacles. Today, about 25.6% of electricity is produced by nuclear power (Agency for Natural Resources and Energy, 2010; Figure 1). The government is aiming at maintaining or increasing the current level of nuclear power generation: 30 to 40% of the total electricity generation after 2030 (Japan Atomic Energy Commission, 2005). Key issues are likely to include: safety problems, security problems, and nuclear education to persuade citizens to make them accept the government's nuclear policy to increase nuclear power plants. The government has to listen to public opinion before it carries out any program. People have the right to decide whether their nation will have more nuclear power plants or not because this is closely related to their security problems. At the same time, people have to express their opinion about nuclear energy. They must be familiar with nuclear problems so that they can form their own points of view.

In that sense, education is key. The role of the government and electric power companies is to educate people by teaching them and distributing information fairly. It is important to make sure that public opinion is regarded as powerful enough to change the governmental policy, if necessary. This paper first analyzes Japanese public opinion: how public opinion in regions that have nuclear power plants (nuclear sites) may differ from general national public opinion. It also discusses the role of the government, power companies and the public, based on the results of these comparisons. Finally, it explains the importance of nuclear education by referring to the Japanese educational environment.

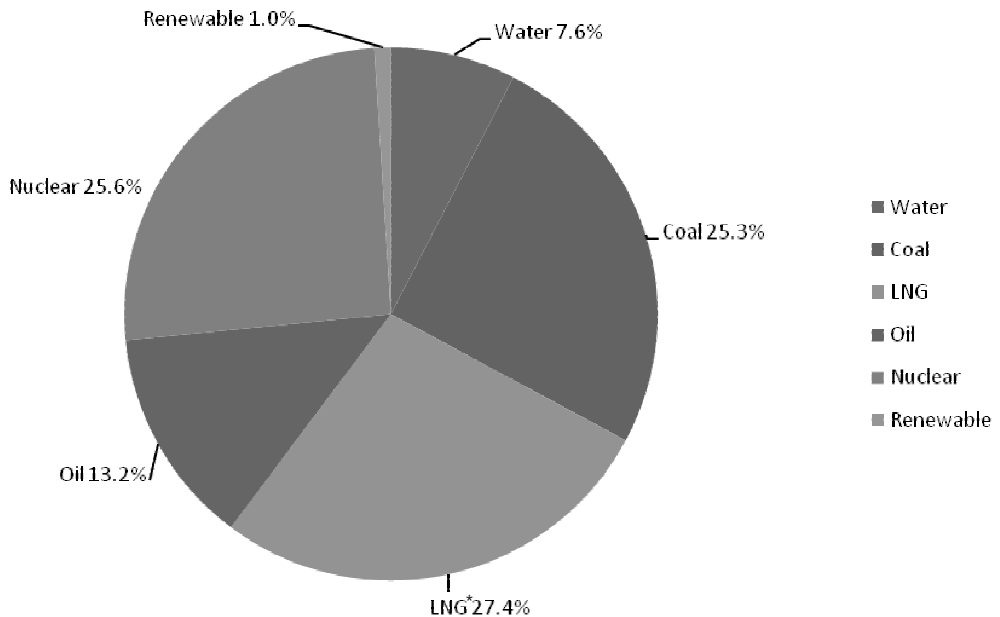


Figure 1: Share of the amount of energy resources in Japan (Agency for Natural Resources and Energy, 2010)\*Liquefied natural gas

### Comparison between Two Public Opinions and Analysis

First of all, it is interesting to compare two different public opinions in order to understand the result of the government explanation, information distribution and education for local people when a new nuclear power plant is constructed. Research was conducted by the Japan Atomic Industrial Forum (JAIF) and the result of that research is very interesting. JAIF is a public servant which aims to solve problems in order to promote the peaceful use of nuclear power through supporting the citizen's point of view. It also supports the government policy to expand nuclear power generation so that Japan can benefit economically and build a better welfare society. Therefore, it is likely that JAIF is a half governmental and half public organization and its position lies in between. The JAIF research was conducted online in January 2010, aimed at understanding national opinion concerning the peaceful use of nuclear power. The research targeted the whole nation and it actually gathered opinions from people living near nuclear sites and everyone else so that it could compare those two opinions. Several interesting questions included:

1. What do you think are the best three resources for electricity supply in the next 10 years?
2. From which information sources do you get information about nuclear power?



3. How much do you know about nuclear power plants?
4. Do you agree or disagree with the policy to promote nuclear power generation?
5. What is your position when there is a plan to construct a nuclear power plant in your home town?
6. What is your major concern about the issue of nuclear power plants?
7. Do you think it is possible to change governmental policy by public opinion?

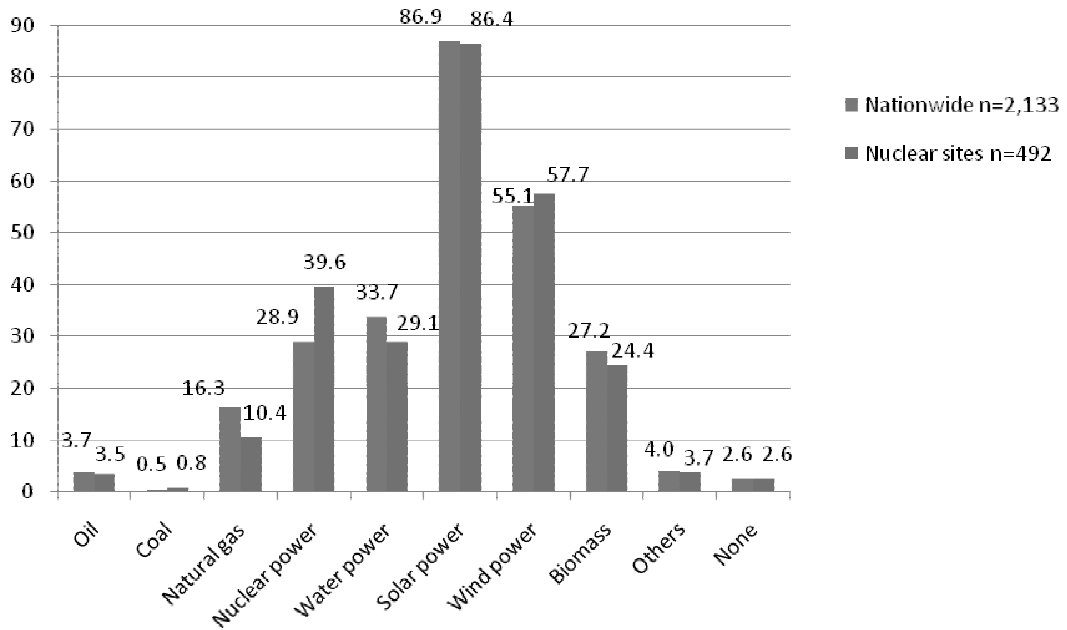
(JAIF, 2010)

These questions reveal very thought-provoking facts and suggestions for the future.

### **1. What do you think are the best three resources for electricity supply in the next 10 years?**

According to JAIF (2010), the most popular resource for electricity is solar power for about 87% of both national level and nuclear site respondents (Figure 2). The second is wind power, about 56% in both categories. And the third is nuclear power among nuclear site respondents and water power on the national level. Generally, it seems that people show greater preference for solar, wind and water power generation than nuclear power generation. This is probably because it is well known that those three methods are very clean and safe, without emitting CO<sub>2</sub>. However, an important point is that nuclear power ranks third among nuclear site respondents. People in nuclear sites are more favorable toward nuclear power generation than people in other regions. This may mean that the governmental or company explanations before constructing nuclear power plants have made people adopt more favorable attitudes toward nuclear power generation.

According to Togasawa (2010), a journalist for the Mainichi Newspaper, even though the best electric resources are renewable energy, such as solar and wind energy, it is necessary to depend on nuclear power today because of less efficiency and cost of renewable energy. Cost performance clearly underlies this problem. Solar power generation costs about ten times more and wind power generation costs about three times more than nuclear power generation in order to produce certain amounts of energy (Institute of Applied Energy, 2010). Society cannot afford to make all energy by renewable energies only, simply because they are too expensive. Therefore, nuclear power generation is indispensable as an interim method until technology develops enough to make renewable energy available to sustain electricity in the entire society.



	Oil	Coal	Natural gas	Nuclear power	Water power	Solar power	Wind power	Biomass	Others	None
Nationwide (%)	3.7	0.5	16.3	28.9	33.7	86.8	55.1	27.2	4.0	2.6
Nuclear sites (%)	3.5	0.8	10.4	39.6	29.1	86.4	57.7	24.4	3.7	2.6

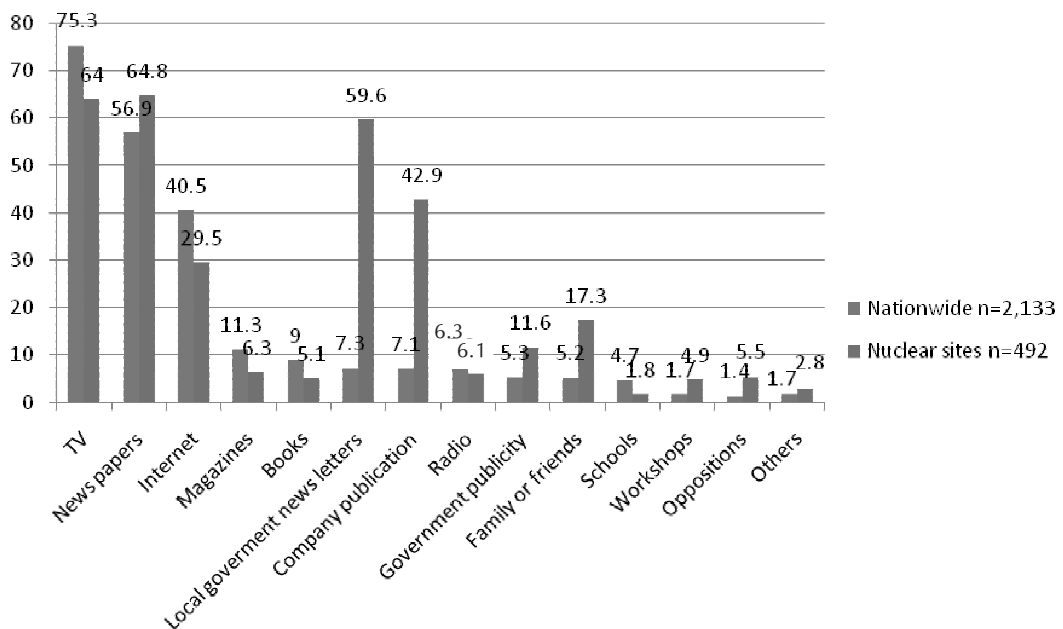
Figure 2: The best resources for electricity in 10 years (JAIF, 2010)

## 2. From which information sources do you get information about nuclear power?

According to JAIF (2010), about 70% of the population in both categories gets information from TV and newspapers (Figure 3). And 40% of national respondents find information on the Internet whereas 30% of nuclear site respondents do. This implies that people get information from media that is managed by private companies, not from governmental sources. This is favorable in terms of fairness because information from private authorities is likely to be more fair than that of government sources. Private authorities, such as press companies, newspaper and broadcasting companies, are likely to tell people the whole truth whereas government authorities only tell convenient truths and not inconvenient truths, since the government is trying to promote nuclear power plants.

Also the 10% difference between nuclear site respondents and national respondents about the Internet sources is likely to come from the fact that the nuclear facilities are usually constructed in rural areas where the average age is higher and fewer people use the Internet than people in cities. Besides, what is very interesting is that about 60% of people in nuclear sites get information from local governmental newsletters whereas less than 10% of national respondents do. Also, about 43% of people in nuclear sites get information from local power companies' publications whereas less than 10% of national respondents do. Overall, people living near nuclear sites have more opportunities to get information from the local government and power companies.

Therefore, people living near nuclear sites are greatly influenced by governmental information distribution and education. This may lead to a possibility of information control by the government so that it can bring forward its nuclear policy. But people have to be able to choose an information source that is more reliable and fair. A suitable information distributing system, particularly for the older generations in nuclear sites, also, has to be established. Creating a fair environment to distribute information that people need for their decision making is crucial.



Where do you get information concerning nuclear power?

Figure 3: Information sources concerning nuclear power (JAIF, 2010)

### **3. How much do you know about nuclear power plants?**

According to JAIF (2010), people living near nuclear sites have more knowledge about the following issues: mechanisms of nuclear power generation, operation rates of power plants, reprocessing facilities, rates of nuclear power generation in Japan, nuclear reprocessing cycles, and high level radioactive waste. Overall, people living near nuclear sites are well educated about nuclear issues compared with others. This is due mostly to the efforts of the local government and power companies. However, it is notable that there is no question which asks how well people know about the safety and security of nuclear power plants in the survey. Security and safety issues should be asked about because they are the most important questions concerning nuclear power plants.

### **4. Do you agree or disagree with the policy to promote nuclear power generation?**

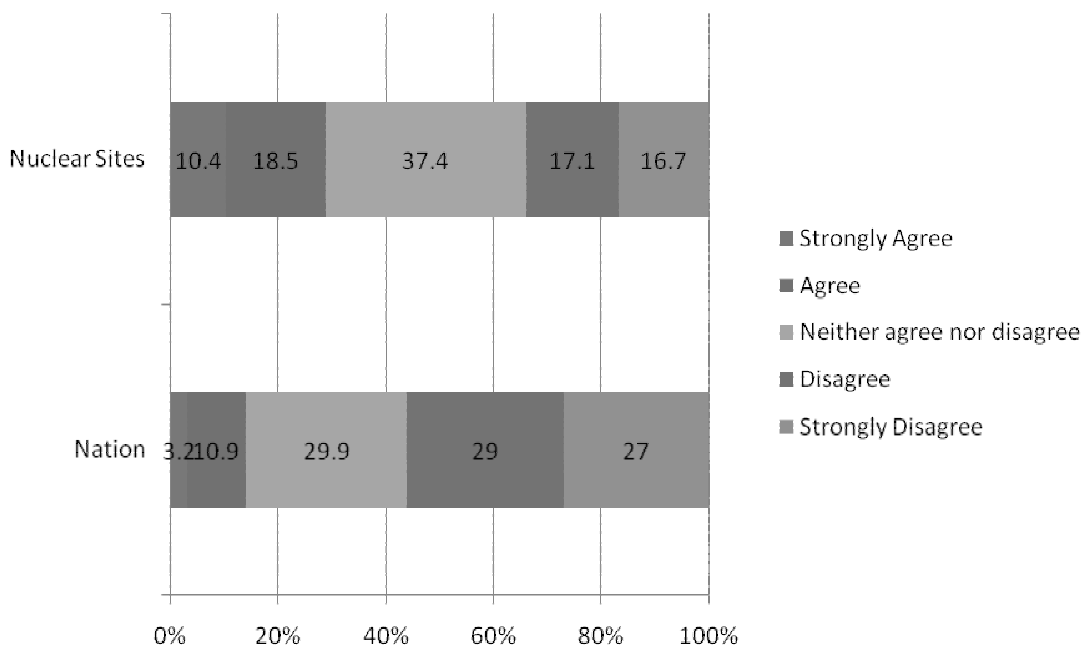
Even though many people are more favorable about renewable energy than nuclear energy, it seems that the number of people who support the idea of nuclear power generation has been increasing, particularly in nuclear sites. About 60% of Japanese citizens support nuclear power generation (Japan Science and Technology Agency, 2010). However, at the same time, the number of people who oppose nuclear energy has also

increased in those regions. The survey by JAIF (2010) shows that 38% agree with nuclear power generation and 15% disagree at the national level, whereas 45% agree and 20% disagree near nuclear sites. It is likely that people living near nuclear sites have both more understanding and fear than people in other regions as a result of explanations before and after the construction of nuclear power plants in their area. Another important fact is that 67% of the national population and 62% of people living near nuclear sites answered, "I'm not sure." In short, more than half of the population is still wondering and cannot find answers to their questions about nuclear issues in Japan. One possible reason for this is the lack of information and education. Therefore, the government and power companies should provide people more opportunities to learn and, more importantly, to think about the issue.

### **5. What is your position when there is a plan to construct a nuclear power plant in your home town?**

People living near nuclear sites tend to be favorable about the construction of nuclear facilities in their town, compared to people in other regions. According to the survey

by JAIF (2010), 14% of all Japanese people agree with the plan and 56% disagree, whereas 30% agree and 34% disagree near nuclear sites (Figure 4). More people are favorable and less are against the plan near nuclear sites. This result is reasonable because the government and power companies are trying to persuade local citizens to promote nuclear policy so that these two institutions can achieve their goal: to increase the number of nuclear power plants in Japan. However, an important question is, "Are they providing all the information, which is true and real, to citizens and are there any cover-up activities to hide any inconvenient truths?" People have to be more careful about information from the government and power companies. They have to be skeptical and keep an open mind to find the truth.



What is your position when there is a plan to construct a nuclear power plant in your hometown?

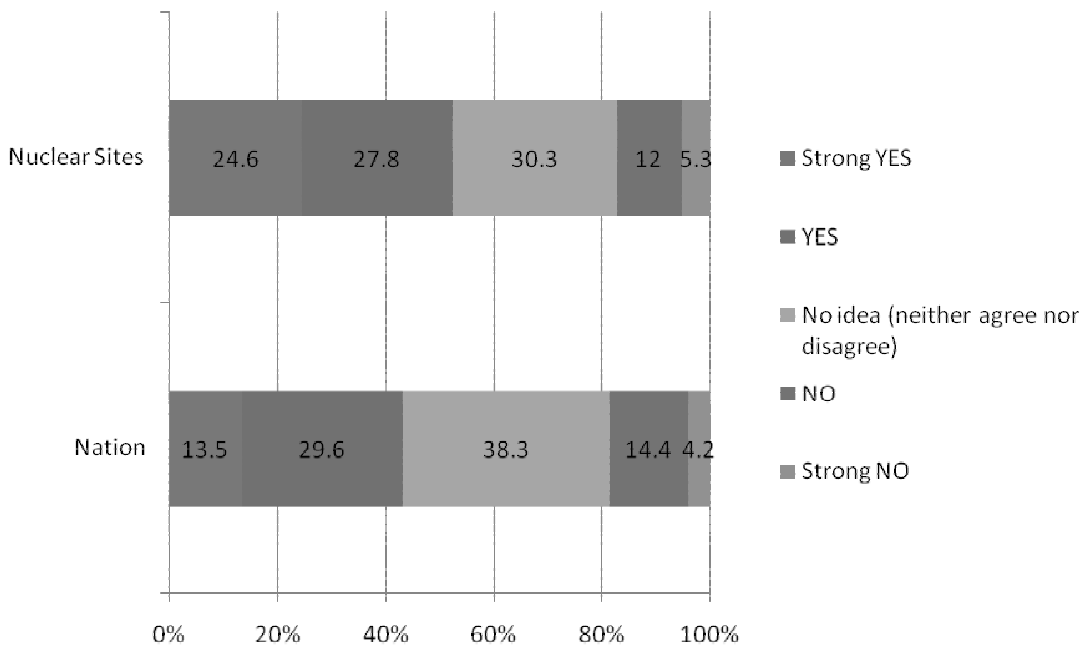
Figure 4: Position when there is a plan to construct nuclear power plants (JAIF, 2010)

Another interesting result is the reason why people agree or disagree with the plan to have a new nuclear power plant in their hometown. Most of the favorable attitude is based on economic reasons. A nuclear site can bring benefits in terms of: getting subsidies from the government, having discounted electric fees, seeing its population increase, improving local employment, and so on. Another reason is that people believe that the provided security and safety are enough to protect their lives.

On the other hand, the reasons for disagreement are: safety and security problems,

unreliability of the government and power companies, and lack of solutions and plans in case of accidents. All of these actually concern safety. As an example, the operating rate of Japanese nuclear power plants was only 58% in 2008 whereas other major countries reach 80% (Tohoku Atomic Energy Conference, 2010). People are not satisfied with the security provided by the government because there are always unexpected accidents and misconduct relating to nuclear facilities in Japan (Figure 5). According to Segawa (2009), the significant cause of those accidents is that the governmental examining officials, who were sent to nuclear power plants, are usually less proficient and un-skilled, compared with the workers in power plants.

Therefore, building a structure to gather highly capable people from both public and private is necessary to improve the situation to prevent any accidents. Overall, it is very important for the government to pay attention to these public opinions and take immediate and accurate actions to eliminate any accidents so that it can gain public trust and support.



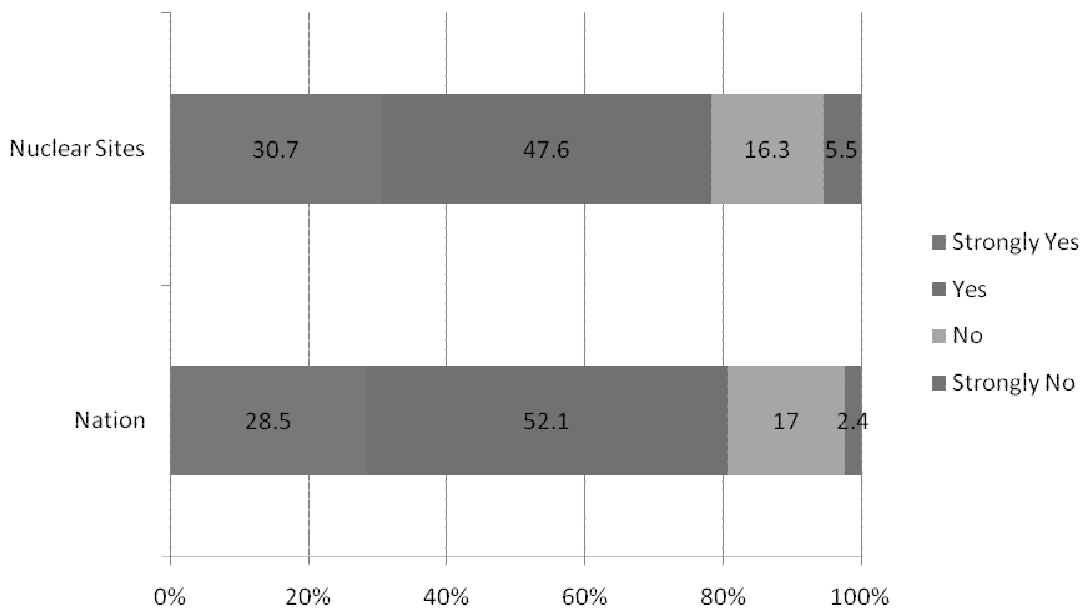
Concerning nuclear power generation, do you think that there are too many accidents in nuclear power plants?

Figure 5: Opinion about accidents in nuclear power plants (JAIF, 2010)

### 6 . What is your major concern about the issue of nuclear power generation?

The public has four main concerns about nuclear power generation. First, people are wondering if there are information controls or cover-ups by the government (Figure

6). About 78% of the people in both categories feel anxiety about this issue. Second, about 73% of the people think they do not get enough information and they need more openness. Third, never ending occurring accidents and cover-ups make people anxious about their safety and security. More than half of the people in both categories think that nuclear power plants are dangerous. In addition, about 51% of the people near nuclear sites feel that there are too many unexpected accidents in nuclear power plants whereas about 42% think so on the national level. Therefore, people near nuclear sites feel more strongly that there are too many accidents and that reaction creates a feeling of unreliability and disagreement toward nuclear power plants. In order to improve this situation, again, the government has to decrease the number of accidents caused by both human and mechanical error.

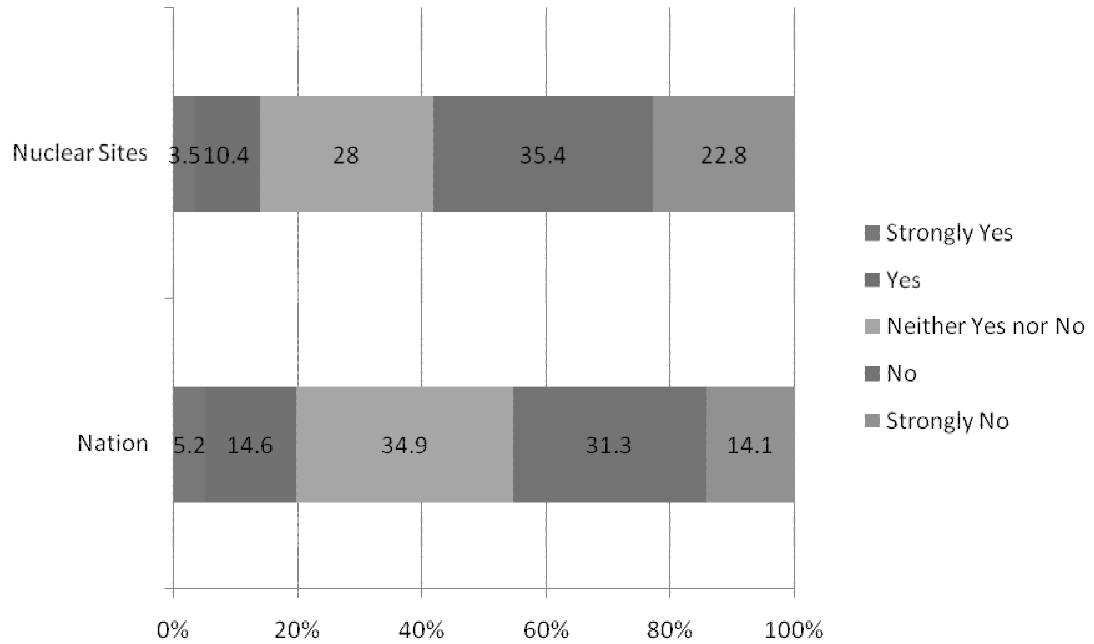


Things that you feel anxiety about: Information hiding and cover-up in Power companies  
Figure 6: Anxiety about information distribution (JAIF, 2010)

## 7. Do you think it is possible to change governmental policy by public opinion?

According to JAIF (2010), less than 20% of the people in both categories think that they can change governmental policy and stop constructing new nuclear power plants in Japan (Figure 7). Of the national population, only 45% think it is impossible to stop nuclear power generation; whereas, 57% of the population near nuclear sites think it is impossible to do so. In short, most people feel that it is impossible for them to change the government nuclear policy by public opposition. Why is this so? It is likely that citizens think they do not have a choice because the decision has already been

made by the government and it is not going to change. What the government is trying to do is persuade its citizens and not provide opportunities to oppose the government. Again, the government and the power companies tend to emphasize the positive aspects and effects of nuclear power plants and try not to leave citizens with negative impressions about nuclear power plants. This intention could result in unfair information distribution that is hiding inconvenient truths.



Do you think that it is possible to stop nuclear power generation by public opposition?  
 Figure 7: Possibility to stop nuclear power generation by public opinion (JAIF, 2010)

### Education

Education plays a crucial role in the process of building and shaping public opinion. This is simply because people make decisions based on their knowledge and the information provided. According to Underhill et al (2010), the Japanese educational system is not sufficient for students to build an ability to analyze matters. Japanese schools tend to teach only facts and concepts and they are weak at giving opportunities for students to think, analyze and look for solutions to problems. As an example, British Gas, a gas company in the UK, is supporting projects that teach children about environmental conservation through actual experiences that include a lot of fun and excitement (Underhill et al., 2010). But which kind of education is correct? There is not only one answer, yet it is important to get children to think about and analyze problems through actual experiences, not only by listening to teachers. In this way,



children will be more familiar with an issue and be more motivated to learn more about nuclear issues and to think about problems.

Also, supplemental nuclear educational opportunities for children are essential in addition to school education. In the case of France, where 77% of national electricity is generated by nuclear power, Electricité de France (EDF) is not only providing teaching materials to schools for free, but also is sending special lecturers to schools and conducting visiting tours in nuclear power plants (Underhill et al., 2010). Such are great opportunities for children to think about and "feel" nuclear issues. However, one thing that should be paid attention to is that some companies are obviously trying to promote their projects and businesses so that they can benefit. Therefore, it is important to have chances to hear from a number of people who work on nuclear issues in a lot of different fields so that students can understand various points of view.

Japan is the only country in the world that has experienced actual atomic bombing. And today, Japan faces the possibility of a nuclear threat from North Korea, one its closest neighbors. Given this situation, nuclear issues should be studied more and taken as a potentially serious problem for its citizens.

## **Conclusion**

Nuclear power generation will remain important until the world creates a renewable energy society. However, before promoting nuclear power generation and increasing the number of nuclear power plants in Japan, the government has to address public opinion. People have the right to obtain information and choose their future. At the same time, citizens have to make serious efforts as well. Citizens have to understand nuclear power and also be able to express their opinion about issues. In order to improve the situation, education is the key. More education and information distribution is indispensable in a democratic environment. More nuclear education is necessary. Not only teaching people the facts, but also giving them opportunities to think about and analyze the issues to solve problems through actual experiences, is crucial. In addition, too many accidents have happened in nuclear facilities in Japan. That worries people about their security and safety with regard to nuclear power generation. The government and power companies have to respond to public anxiety in a timely way. They need to take appropriate actions to eliminate accidents in order to gain national public trust and support. Also, creating an environment in which people feel they can change government policy and stop nuclear power generation if they demand so is essential.

All Japanese citizens have to pay attention to nuclear power generation and contribute to achieving a successful future energy environment in Japan. Peaceful use of nuclear power is certainly one of the keys for not only Japan, but also for the rest of the world, to achieve further development.

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# How to Deal with North Korea? Japanese Public Opinion

Miki Okawa

## Introduction

Japanese people, in a recent poll, chose North Korea as the most dangerous country for Japan (*Yomiuri Shimbun*, October, 2010). North Korea is geographically close to Japan, so that factor may cause Japanese people to feel a direct military threat. In addition, the uncertainty of the regime and the repeated dangerous behavior of Pyongyang has annoyed Japan. Thus, the Japanese government has taken a strong stance against North Korea since 2003 when Prime Minister Koizumi's efforts for diplomatic normalization failed.

Concerning the North Korean problem, Japanese public opinion has had much influence on policy making in Japan. In 2003 when the abduction issue was raging, it became an important campaign issue in the lower-house election, and the number of *Rachi Giren*<sup>1</sup> members grew from 42 to over 180 after the election (Schoff, 2006). The significant role of public opinion in Japan is well recognized by North Korean officials, too. A North Korean senior official has said that North Korea recognizes public opinion as more important than the government or Ministry of Foreign Affairs (Ibid.). Therefore, this paper aims at getting a better grasp of the current public opinion concerning North Korean problems in the hope of finding effective solutions. What bothers Japanese people so much and what would help them to be reassured?

In this paper, I will examine coercive diplomacy toward North Korea by referring to Japanese public opinion. First, I will look at a survey asking what Japanese people are afraid of concerning North Korea. Then I will explain the Japanese public attitude toward major problems between Japan and North Korea, and introduce sanctions against North Korea responding to those problems. Next, I would like to know what can reassure the Japanese public. Thus, here I again analyze Japanese public opinion. Are people satisfied with the current sanctions against North Korea? Then I examine the efficiency of economic sanctions as a solution to the North Korean problem.

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<sup>1</sup>*Rachi Giren* is a group of politicians who promise to work hard to facilitate the return of abductees from North Korea to Japan as soon as possible.

Finally, I also aim to explore alternative measures for Japan to deal with North Korea.

### What Are Japanese People Afraid of Concerning North Korea?

The Japanese cabinet office has taken an opinion survey about North Korea annually since 2000 (although the data of 2001 is missing). The question has been "Which issue are you most concerned with regarding North Korea?" People can choose four issues from a number of various problems between Japan and North Korea, such as, the abduction issue, the nuclear problem, missile tests, the political system, North Korean defector problem, North-South relationship issues, normalization talks, economic and cultural exchanges, food aid, maritime spying, and so on. As a result, the abduction issue, the nuclear problem, and missile tests have been the primary choices for many Japanese every year. (See Figure 1.)

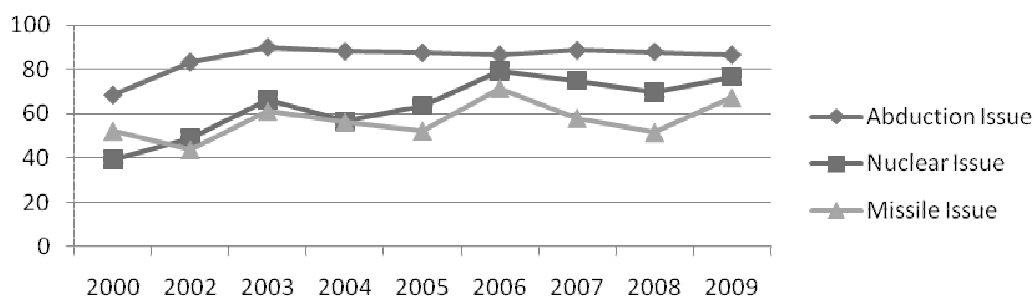


Figure 1: Which issue are you most concerned with regarding North Korea?  
Public opinion survey by Cabinet Office<sup>2</sup>

### Analysis of the Survey and Public Opinion about Each Issue

The abduction issue first got high public attention in 2002 when Prime Minister Koizumi visited Pyongyang, and it has remained as the top concern until today. At a meeting in 2002, Kim Jong-il, the leader of North Korea, first admitted to past kidnappings and apologized; eventually, five abducted Japanese returned to Japan in 2004 (Ministry of Foreign Affairs of Japan, 2010). However, the Japanese public is not satisfied with the information about the other abductees that North Korea said were dead. One survey claims that 90% of Japanese people are doubtful about Pyongyang's explanation and not yet satisfied (*Nikkei Research*, 2002). Thus, for Japanese people, this problem is not yet settled, and the Japanese government still

<sup>2</sup>The graph was made based on data from Cabinet Office, Government of Japan: October, 2000; October, 2002; October, 2003; October, 2004; October, 2005; October, 2006; October, 2007; October, 2008; and October, 2009.

presses Pyongyang hard on this issue.

While the level of public concern about the abduction issue is rather stable, attention to the nuclear issue and missile problem was remarkably high in 2006 and 2009. This is due to the impact of North Korean missile tests and nuclear tests during those years. Actually, at the six-party talks in 2005, North Korea announced it would abandon all nuclear programs and weapons; however, despite that promise, it conducted a nuclear test in October, 2006. And again it conducted a nuclear test in May, 2009 (MOFA, 2010). Along with the nuclear tests, North Korea has also conducted missile tests. In July, 2006, North Korea launched seven missiles over the Japan Sea. The longest-range missile Pyongyang had deployed was assumed to be the 1,300-kilometer-range Nodong (Arms Control Association, 2006), which is enough to attack Japan. However, in 2006, the Taepo Dong-2, whose range is estimated to be 5,000 to 15,000 kilometers (Ibid.), and can fly over Japan and reach the Pacific Ocean, was also launched. In April, 2009, North Korea again conducted a missile test and also repeated a ballistic missile launch in July.

These repeated dangerous activities by North Korea have gotten much attention by the Japanese public, and caused considerable alarm about security problems. According to a survey by Fuji TV, after the missile test in 2006, more than 73% of Japanese feared that Japan would be attacked by North Korea (Fuji TV *Houdou* 2001, July, 2006); and also after the nuclear test of that year, 80% felt militarily threatened by North Korea (Fuji TV *Houdou* 2001, October, 2006). Although the worry about the security environment was rather temporary, it brought about much discussion inside Japan about national security. For example, when North Korea conducted a missile test in 2006, the Japanese defense minister at the time said, in the case of a possible missile attack, Japan should prepare its military capability to destroy the aggressor's bases. Of the Japanese public, 40% responded to his words by agreeing while 49% disagreed (Nippon Television Network Corporation, July, 2006). This kind of debate frequently occurred at that time, although it used to be taboo in Japan to discuss the possibility of expanding its military capability because of Article 9 in Japan's constitution, which forbids the formation of an active offensive military.

For Japanese people, these problems are all understood as keys to Japan-DPRK relations, and thus the problems are not going to be solved individually. Preceding the Koizumi-Kim summit in 2002, Japanese politicians and media warned the Koizumi government not to proceed with normalization without first making more progress on the abduction issue (Manyin, 2003), and Prime Minister Koizumi himself publicly

stated that full normalization could not take place until after the nuclear issue was resolved (Ibid.). Moreover, the North Korean nuclear problem is, of course, a world concern, and the international society cannot ignore the missile problem either. Because if the estimated range of the Taepo Dong-2 is correct and it can go beyond the Japanese islands, the potential targets of Pyongyang's ballistic missiles are not only its immediate neighbors, but also countries across the Pacific Ocean. Therefore, the international society has quickly responded to these dangerous actions of North Korea. The next section will focus on public opinion about the sanctions Japan and the international society has imposed on North Korea.

## **Responses to North Korea**

### *United Nations*

The United Nations has issued three resolutions (UN Security Council Resolutions) against the DPRK. Especially, UNSCR 1718 and UNSCR 1874 include sanctions. Resolution 1718 responds to the 2006 North Korean nuclear test, and further sanctions were added to resolution 1874 issued against the 2009 nuclear test. For instance, resolution 1718 bans the transfer to and from North Korea of several types of weapons and luxury goods; furthermore, resolution 1874 bans all arms transfers from North Korea (United Nations). For small arms and light weapons transfers to North Korea, resolution 1874 requires that states notify the DPRK sanctions committee before any transfer (Ibid.). Moreover, in terms of financial measures, resolution 1874 calls on states not to provide grants, assistance, loans or public financial support for trade if such assistance could contribute to North Korea's proliferation efforts (Ibid.).

### *The Japanese Government*

In 1998, when North Korea first launched its ballistic missile over the Japan Sea, Japan's Prime Minister at the time, Keizo Obuchi, announced a "dialogue and pressure" policy toward Pyongyang. After Obuchi, the next Prime Minister, Koizumi, emphasized "dialogue" until 2002, but when the bilateral talks broke down the next year, he shifted to strengthen "pressure" (Japan Institution of International Affairs, 2005). After the missile test and the nuclear test in 2006, Japan decided not to let any North Korean ships enter Japanese territorial waters and prohibited any imports from North Korea (MOFA, 2009). After the 2009 nuclear test, Japan also banned any exports to North Korea (Ibid.). Thus, there is no trade between Japan and the DPRK at present.

## Japanese Public Opinion about the Sanctions

Although Japan has employed a "dialogue and pressure" strategy as a key of its policy toward North Korea, the Japanese public seems to prefer pressure more than dialogue. In early 2004, pressure groups such as *Kazoku-kai* and *Sukuu-kai* collected more than a million signatures to request economic sanctions against North Korea and handed them to the Prime Minister's Office (Schoff, 2006). Moreover, various opinion surveys about the government's reaction toward Pyongyang were taken by the media in 2006 and 2009, demonstrating that the majority of Japanese are hard-liners against North Korea. For example, since 2006, Fuji TV has taken an opinion poll every time North Korea has conducted either a missile test or a nuclear test. The results show an increasing preference for strong sanctions. According to their research, 57% of people wanted more severe sanctions against missile tests in 2006 (Fuji TV *Houdou* 2001; July, 2006). Three months later, after the nuclear test in October, about 82% supported additional sanctions (Fuji TV *Houdou* 2001; October, 2006). At the time of the missile test in 2009, almost the same number of respondents, 79%, wanted to strengthen the sanctions (Fuji TV *Shin Houdou* 2001; 2009). Also, a survey conducted by the *Yomiuri Shimbun*, a Japanese conservative newspaper, shows that 78% of Japanese people supported further sanctions in April, 2009 (*Yomiuri Shimbun*, April 2009), and the number rose to 88% after the nuclear test in May (*Yomiuri Shimbun*, June 2009).

However, regardless of the majority support for sanctions, many public polls at the same time suggest that Japanese people are not very confident in the effectiveness of sanctions. When TV *Asahi* (2006) asked if people thought further economic sanctions would work to freeze the nuclear program of North Korea, 41% of Japanese people answered "no," while 46% said "yes." The *Yomiuri Shimbun* also reported that there was little difference in the number of people who considered economic sanctions as effective and those who saw it as ineffective: 46% see sanctions as effective, while 45% think sanctions do not help prevent Pyongyang from conducting nuclear and missile tests (*Yomiuri Shimbun*, June 2009). Even among those who support strengthening the sanctions, 43% recognize their inefficiency (Ibid.). That is, due to the repeated missile and nuclear tests by North Korea, many Japanese people believe that economic sanctions are not working very well. Looking at these results, it seems that many Japanese no longer have faith in the effectiveness of sanctions, but they favor them because they do not see any other possible effective solutions.



## **Ineffectiveness of Economic Sanctions: China's Investment and Chinese Public Opinion**

Why have sanctions not been working well? The main reason is China's huge investment in North Korea. Since the collapse of the Soviet Union in 1991, China has become the main trading partner and provider of aid to North Korea (Chan, 2010). Even after the UN Resolution 1718, China's trade with North Korea has continued to increase. Bilateral trade between China and North Korea reached \$2.79 billion in 2008, up 41.3% compared to a year before (Bajoria, 2010). Furthermore, Beijing decided to provide \$10 billion in investment in North Korea despite the tightened economic sanctions by UNSCR 1874 (Jung, 2010). This investment is about 70% of North Korea's gross domestic product (Ibid.). Pyongyang does not believe this investment is in violation of the UN Resolutions, as it says that the original purpose of the investment from China is to build railroads, harbors, and houses (Ibid.), which has nothing to do with building a nuclear program.

Economic sanctions are one measure of "containment." The idea is to isolate a country diplomatically and economically in the hope that it will eventually collapse (Quinones, 2009). However, North Korea's neighbors, namely China and Russia, do not want it to collapse because the collapse of North Korea would send hundreds, if not thousands, of refugees, arms, and even fissile material flowing into their countries (Lankov, 2009). That is, North Korea's instability is more frightening for China and Russia than its nuclear capability. As Lankov (2009) argues, sanctions can be effective only if they are supported and enforced by all major states; for the reasons above, however, it seems to be almost impossible to convince Beijing and Moscow to impose tough sanctions on North Korea. China and Russia believe that North Korea will not attack them as long as they keep appeasing Pyongyang.

The result of a public opinion survey taken in China is highly consistent with this theory. A survey in 2007 shows that more than 70% of the Japanese people chose North Korea as the most dangerous country; on the other hand, only about 10% of the Chinese people chose it as a dangerous country (*Yomiuri Shimbun*, 2007). Moreover, Japanese people ranked the North Korean nuclear problem as a priority issue that Japan, China and South Korea should cooperate on and address, while it was not of high priority for the Chinese people (Ibid.). (Chinese chose economic exchange as their first priority.) Also, almost 70% of Chinese have good impressions about Russians (Ibid.). Thus, the Chinese public see Russia as a good partner, and they are not very much afraid of North Korea.

## Future Prospects

Contrary to containment, the diplomatic strategy, "engagement," is designed to induce a hostile nation to cooperate with the international community and gradually transform itself into a responsible member of the global society (Quinones, 2009). In terms of the North Korean problem, China and Russia prefer such a moderate strategy. Yet what kind of diplomatic or economic engagement would the Japanese public support?

Actually, there is no shortcut for Japan to shift their policy to engagement. It must be gradual change. Because of the failure of normalization talks in 2003, the Japanese public is doubtful about the promise of bilateral talks. Despite the "dialogue and pressure" policy, a survey by NHK indicates that 37% of Japanese people support economic sanctions, while only 18% prefer dialogue (NHK, 2009). Also, 73.4% of Japanese people regard dialogue ineffective as a solution to the North Korean nuclear problem (Fuji TV Houdou 2001; October, 2006). Thus, it seems to be difficult to get public approval to resume official talks with North Korea. And of course, dialogue would need explicit cooperation from North Korea as well.

It seems to be almost impossible to get public support to provide any kind of economic assistance to North Korea, either. At the time of Prime Minister Koizumi's visit to North Korea, a public poll conducted by Fuji TV reported that 67% of Japanese people supported normalization and, at the same time, almost the same percentage of people said normalization talks should be started only after the abduction issue was settled (Fuji News Network, 2002). Prime Minister Koizumi promised that Japan would provide North Korea with an "economic cooperation" package when relations were normalized (Manyin, 2003). That is, without first solving the problems, normalization is difficult to be achieved. Japanese people, then, do not want to give any economic assistance to North Korea.

One of the main reasons why Japanese people do not want to give direct economic assistance, as China does, is that they suspect Pyongyang would use that money to develop their nuclear program. Because North Korea withdrew from the Nuclear Nonproliferation Treaty (NPT) in 2003 and has rejected inspections by the International Atomic Energy Agency, Japan and most members of the international community have reason to question whether or not North Korea is continuing to develop its nuclear program. Until Pyongyang becomes cleared of such suspicion by accepting IAEA inspection, it may be impossible for Japan and other hard-liner countries to provide direct investment.

There are some international programs providing North Korea with book donation, food aid, and so forth. These activities may not directly help the government change, but it aims to improve the quality of life of ordinary people in North Korea by educating them and minimizing gaps among them. However, it is an open question as to how much access the ordinary people, who are living in a society which is under strict governmental control, have to these resources. The North Korean government and top elites seem to control society for their own benefit, thus there is no possibility of changing the system top-down. On the other hand, if ordinary North Koreans realize that something is wrong with their society, it could be the sign of change, bottom-up. Thus it is necessary to keep trying to let people know about the outside world and change the society from within.

## **Conclusion**

There are three major problems between Japan and North Korea. The abduction issue first received serious public attention in 2002 when Prime Minister Koizumi initiated normalization talks with Kim Jong-il, and Kim recognized the abduction of Japanese citizens by North Korean agents. Missile tests and nuclear tests in 2006 and 2009 then drew public attention to national security problems within Japan. These dangerous actions by North Korea brought about much domestic discussion on security matters and Japan's present lack of military capability.

Responding to these events, Japan has taken a strong stand toward North Korea and Japanese public opinion supports coercive diplomacy. However, despite the strict sanctions by the U.N. and Japan, Pyongyang has not yet given up its nuclear program and has continued to try to antagonize the international community. Therefore, according to opinion surveys in Japan, almost one half of the Japanese public actually doubts the effectiveness of sanctions. If all major countries impose tough sanctions on North Korea, Pyongyang may not have any exit other than to just collapse or go to war—and possibly lose. China and Russia, however, do not want either collapse or war for North Korea, as either result will send many refugees into their countries and create chaos. Therefore, they are not going to cooperate in placing sanctions on North Korea. On the contrary to Japanese public fear of North Korea, the Chinese public actually feels little threat from Pyongyang because they believe that North Korea will not attack them as long as they provide aid and continue appeasing the North Korean government. Thus, if Japanese people do not want a war in East Asia, it is time to shift their policy to engagement in order to transform North Korea into a safe nation.

Since Pyongyang rejects inspections by the IAEA and does not follow the international rules, direct investment, such as China gives to Pyongyang, must be denied by the Japanese public. And also opinion polls imply a negative attitude of the Japanese public toward the possibility of success in official talks. Thus Japan's government needs to gradually shift to a more moderate position. Moreover, in order to shift its policy with public support, government officials and the media have to be responsible in explaining the situation. They need to tell Japanese citizens why sanctions are not working and what will benefit Japan the most. The first priority for the world is to avoid a war on the Korean peninsula, thus it needs to change North Korea into a safe and responsible member of the international society. Change on the Korean peninsula could never be radical, that would only result in a war. Although the current situation is irritating, the best we can do now is to avoid a war.

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# A New Trend in Recycling: Ecofeed

Rika Yamamoto

## Introduction

Japan imports 70% of its food, which is 58 million tons yearly (Network Earth Village, 2010). And about one third of it, i.e., 19.4 million tons, ends up in dumping grounds. The 10 million tons of waste, which is thrown out by householders alone, amounts to as much as 11 trillion yen (JPY) every year. This number is roughly equal to the total annual output of Japan's agricultural and fishing industries. Moreover, disposal of this food waste costs 2 trillion yen (Ibid.). To alleviate the careless waste of food in Japan, food waste should be recycled, particularly into animal feed.

## Sources of Food Waste

The 19.4 million tons of food waste comes from a variety of sources. Some is produced in the food manufacturing process; other waste comes from restaurant kitchens. Some is unsold or expired food discarded from convenience stores and supermarkets. There is a large amount of cooking scraps and leftovers from households, too (Yamamoto, 2005). From each convenience store, approximately 10,000 to 15,000 yen worth of lunch boxes are thrown away every day. Given that there are 40,823 *konbini*<sup>1</sup> in Japan, that makes the waste worth 220 billion yen per year. The total volume of food discarded by convenience stores and supermarkets because of expiration date comes to 6 million tons annually (Fitzpatrick, 2005).

Most importantly, food waste from households accounts for more than half of the total waste, that is, about 10 million tons per year (Yamamoto, 2005). This means that one individual annually produces 80 kilograms of food waste. One study (Ibid.), which examined components of food scraps from households, details Japanese people's wasteful attitude toward food. The study found that 30% of the waste consists of leftovers, and 10% is completely untouched food. This makes the annual amount of leftover food 2.65 million tons and that of untouched food, 1.06 million tons. To make matters worse, 40% of the untouched food is thrown out by householders before it

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<sup>1</sup> A *konbini* (abbreviation for "convenience store") is a small shop that sells items such as snacks, soft drinks, cigarettes, newspapers and magazines, along with a selection of processed food and some groceries.



passes its expiration date, and 20% within a week after it expired. All this food waste, both industrial and household, is incinerated and dumped in landfills. This process produces global warming gases and toxic substances (Ibid.).

### **Current Approaches to Food Waste**

In order to tackle this wasteful use of food, there have been many projects initiated by companies, especially since 2001 when the Japanese government introduced a Food Recycling law (JFS Newsletter, 2004). This law aims to "reduce the amount of food waste generated by food manufacturers and restaurants, and to promote the reuse of food waste such as by turning it into livestock feed and compost" (JFS Newsletter, 2004). Under the Food Recycling law, all food-related companies were required to reduce food waste by over 20% by 2006. A number of manufacturers, restaurants and supermarkets were pressed into action by this law. The Hotel New Otani in Tokyo, for example, now has its own composting facility in its basement. There, not only food waste such as banquet hall leftovers, but also used flowers from hotel wedding ceremonies, are transformed into compost (ibid.). Seiyu, a major supermarket chain, has conducted more cautious purchasing to minimize the waste (ibid.). It also makes unsold food available for employees to buy at cheaper prices. By doing so, the store succeeded in reducing the amount of unsold food disposed of by 18% in only a year.

Related to the above, Japan's first fuel cell bio-gasification power plant is located on Port Island in Kobe City. The plant collects sorted food waste, "produces methane gas by fermentation, and uses it in fuel cells to generate electricity" (JFS Newsletter, 2004). Several large shopping centers also produce methane gas, by putting food waste into a tank called a bio-reactor, to run boilers and heat water. As a result of these measures, the recycle rate of total industrial food waste rose from 48% in 1996 to 72% in 2004.

### **A Nation-wide Governmental Response**

Among all the measures to recycle food waste, ranging from making compost to generating electricity, transforming food scraps into animal feed is the most promising measure. In 2009, the Ministry of Agriculture, Forestry and Fisheries (MAFF) initiated a nation-wide project for recycled feed production. This project aims to raise Japan's feed self-sufficiency rate by 10% by 2015 by recycling food waste. In Japan, while the self efficiency of livestock products, including meat, eggs and dairy goods is 66%, that of compound feed for livestock is only 25% (MAFF, 2009). In the 2007

fiscal year, 75% of grains used for production of compound feeds, including corn, kaoliang, barley, wheat and soybean oil residue were imported. If Japan can produce feed on its own by recycling food waste into feed, not only can it reduce the environmental burden of food waste, but also the self-sufficiency of animal feed can be greatly improved. In addition, if Japan becomes less dependent on foreign grains, whose prices have been going up, farmers will be able to lower their livestock production costs. According to Maeda (2008), "a pig farm in Akita Prefecture, northern Japan, has offset a 20% jump in compound feed price in the past year by making its own recycled feed from scraps disposed by local food manufacturers."

As a result of the government's efforts to realize a so-called ecofeed project, including the introduction of a certification system in 2009 and support provided for the research and development of an efficient ecofeed production method, there has been an increasing number of companies and organizations dedicated to ecofeed production. According to Sugiura, Yamatani, Watahara, and Onodera (2009), there were 171 organizations across Japan which are engaged in ecofeed production as of December 2007. One of them is a company named Fujikoh. Fujikoh launched its first project to turn food waste into compost in early 1997. As the recycling methods widened its variety and ecofeed began to catch attention from the recycling industry, Fujikoh also started to recycle feed production. Since ecofeed can give farmers an economic advantage, Fujikoh expects an expansion in demand for recycled feed in the future (Fujikoh Company, 2006).

### **How Food Waste Becomes Ecofeed**

Food waste is turned into ecofeed in feed plants after going through a rigid pre-processing. The following raw materials are used to produce ecofeed: by-products produced from food processing, surplus food which is not used during processing, cooking waste, scraps and leftovers produced by the catering industry and households. A guideline for the safety of ecofeed was issued by MAFF in 2006 to promote ecofeed production. According to the guideline, raw materials used for the production of ecofeed should not contain mammal, poultry and/or fish proteins. They also have to be clear of any foreign object, such as a broken piece of packing or cookware. Leftovers can be used as raw materials for ecofeed only when they are from identifiable sources.

There is a strict rule for transportation and storage of raw materials, too. Raw materials should be collected from sources as swiftly as possible and should be kept in

containers with lids so that they can be kept from crows and rodents and so that they will not be contaminated with bacteria or foreign objects. They have to be transported by refrigerated vehicles in order to prevent collected food waste from oxidization and quality deterioration. When transported safely to an ecofeed plant, the collected raw materials are subjected to careful inspection by plant workers for complete removal of foreign objects.

After inspection, the raw materials, once clear of any foreign objects, are dried to enhance conservation by using a dehydration method. There are four types of dehydration methods: low pressure frying, boiling drying, high temperature fermentation drying, and high temperature drying. When finished with the dehydration process, raw materials are crushed and squeezed into small pieces. Then they are put into packages as final ecofeed products. There is also another kind of ecofeed which does not require the dehydration process. Food waste is mixed with water or milk and goes directly to farms through pipelines. This method requires less energy costs, but the product tends to spoil sooner than dried ecofeed (Sugiura et al., 2009).

### **Household Food Waste**

While the percentage of the total recycled food waste from food-related industries is going up along with the increasing number of ecofeed plants, almost no food waste from household kitchens is recycled. Therefore, the ecofeed movement must spread its reach to more households across the country. According to the JFS Newsletter No.17 (2004), there are some recycling projects being done at a regional level with a practical system set by local governments. In Aya town (about 7,600 residents) of Miyazaki Prefecture, for example, the government collects food waste from households. Each household is charged 100 yen as a collection fee. According to the JFS Newsletter No.17 (2004), "the food waste collected is composted and used by local farmers to grow vegetables, which are then consumed by local people. In this way, the nutrients are recycled locally." There are two similar cases reported in Nagai city of Yamagata Prefecture and in Shinami Town of Iwate Prefecture. With local governments' well-planned systems and enough encouragement to its residents, ecofeed can also be produced at the consumer level. A well-planned system would be, for instance, distributing antioxidant garbage cases to each household. It may be a good idea to put an official ecofeed label by MAFF on the sides of the case to show the importance of the project. Every month, a set of 30 bags with zippers would be delivered to households, in which householders would put food waste each day. Each householder then would put the bag into large containers with a lid, of which there would be many in the area,

within a few minutes' walk from every household. The bags would be collected every day by trained staff, who would deliver the collected food waste safely to the nearest ecofeed plant. Only with a system like this, will food waste from households, which accounts for more than half of the total food waste, be recycled into ecofeed.

## **Conclusion**

The amount of food waste in Japan is staggering. It amounts to as much as 19.4 million tons every year (Network Earth Village, 2010). However, there have been a number of companies, organizations and local governments working to reduce, reuse, and recycle food waste. Most importantly, some of the companies and the Japanese government have initiated a very promising project called the ecofeed project as the best solution for Japan a country with a massive amount of food waste and a low self-sufficiency rate of animal feed. By recycling food waste into ecofeed, Japan can raise its feed self-sufficiency while easing the environmental burden of incineration and the dumping of food waste. Therefore, Ecofeed projects, both by companies and by consumers, will and should soon be the biggest trend in recycling systems in Japan.

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## Information for Contributors

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