

Food Safety Issues in the Vegetable Trade between China and Japan:  
What is Required to Establish Effective Food Safety System in Their Bilateral Food Trade?

By

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## **Abstract**

In the context of expanding global food trade in which we import and consume a variety of foods from across the world, insuring food safety, an essential public health issue, has become a major concern in our food supply system. Over the past several years, food related scandals of Chinese made foods have been in the headlines and caused a high degree of concern for Japanese consumers. Japanese government has responded by imposing strict regulations on Chinese food products and often disrupted mutually beneficial food trade relations between China and Japan.

Through a case study of spinach safety issue occurred in 2002, this paper illustrates current food safety system of imported food in Japan and exporting food in China as well as policy planning mechanisms of food safety regulation in both countries. Based on the findings of a case study, the paper argues that to change Japanese consumers' biased and incorrect perception of Chinese food products, which has greatly affected food safety policy design, is required to achieve effective food safety systems. Framework of social construction of target population theory is applied in understanding the policy planning mechanism of food safety regulation as well as in discussing policy prescriptions toward establishment of effective food safety system.

## **Introduction**

In the context of expanding global food trade, insuring safety of imported food products is an essential requirement for the stable food trade relations as well as for the people's health and life. Study conducted by the World Bank in 2005 shows that food safety has become major concern of international consumers thus one of the key factors in competitiveness in international consumer markets, especially in developed country (World Bank, 2005: 6). Meanwhile, trade conflicts caused by difference in food safety regulations have become one of the biggest issues in the recent international trading system (Roberts et al., 2003:29).

China, who has become world's top exporters of agricultural food products, has suffered from infamous reputations of its food products due to a series of violations of the food safety standards set by its trade partners. For example, from August 2002 to July 2003, the US Food and Drug Administration (US FDA) refused 1,285 shipments of Chinese food products, of which 630 were agricultural and aquatic products that violated the food safety standards of the U.S. in use of chemical substances (Dong et al., 2004: 2). In 2002, the European Union (EU) banned all food product imports of animal origin from China following a discovery of veterinary medicine residues in products imported from China (Thompson et al., 2007: 2). In 2005, after *Malachite green*, a cancer-causing substance was found in Chinese farm-raised eels, Japan, South Korea, and Hong Kong suspended their imports.

To make matter worse, China caused domestic food-poisoning incident in 2008, when *melamine* contaminated milk powder killed 6 infants and sickened 300,000 kids in China. The incident was widely reported internationally as tainted milk incident and received considerable attention (Liu et al., 2009: 34). Consequently, the international consumers have become more concerned and skeptical about the safety of the Chinese food products (Long, 2010).

Distrust of Chinese food products and negative reaction toward a series of Chinese food scandals are prominent in Japan, which has imported and consumed large volume of food products from China. According to recent surveys conducted by Tokyo-Beijing Forum and Frozen Food Association of Japan, Japanese consumers have regarded Chinese food products as “unsafe” or “dangerous” to eat and recognized safety of Chinese food products as a primary reason that has hindered the development of bilateral relationship (Tokyo-Beijing Forum, 2009).

### **Research Question and Method**

While Chinese food products have infamous reputation especially in Japanese consumers, scholars have argued that there have been improvements in the Chinese food safety system in the past few years, especially for exporting food products (Calvin et al., 2006). Chinese food products, particularly those produced by export-oriented producers in the coastal regions have reached food safety levels consistent with international levels (Dong et al., 2007 and the UN, 2008: 3).

Therefore, the first objective of this paper is to answer research question “Are imported food products from China unsafe to eat?” The second objective is to address large research question “What changes are required to establish effective food safety system in food trade between China and Japan?”

As a method to answer these questions, this paper will study spinach safety issue between China and Japan, which resulted in severe economic loss and became an opportunity for both countries to recognize and fix problems in their food safety regulations. This issue dates back to early 2002, when excessive pesticide residues were found in frozen spinach imported from China to Japan. Coupled with other domestic and international food related scandals already happened at that time in Japan, the spinach safety issue has generated more controversy in Japan, resulting

in a voluntary import ban on Chinese frozen spinach. In my analysis, I examine the policy responses to the spinach safety issue by Japan and China and illustrate current situation of food safety system of imported food in Japan and exported food in China. The case study is conducted based on literature review and white paper, reports, survey, and statistics data from the Ministry of Health, Labor, and Welfare Japan (MHLW), Ministry of Agriculture, Fisheries and Food (MAFF) and these ministries' related research institutions as well as email query to the MHLW.

Then, taking findings of a case study into account, the paper will argue that spinach safety issue is not solve despite the fact that safety of Chinese frozen spinach has been improved. Then, through addressing the question “what is required to solve spinach safety issue?” the paper examines policy mechanisms of food safety regulation in Japan and China, specifically, the factors that affect policy planning of food safety regulation. Then, it addresses large research question “what is required to establish effective food safety system between China and Japan,” drawing on social construction of target population theory. Finally, the paper discusses the policy prescriptions for both countries to establish effective food safety system.

### **Social Construction of Target Populations**

According to the theory of social construction of target populations, “target population” is objective that policies intend to impact either positively or negatively through allocation of benefits or burdens, and all policies have target populations. Schneider et al. introduce two dimensions which are central of their framework: the political power, which represents the target populations' degree of political power such as political resources and the social construction, which represents whether target populations are “positively or negatively socially constructed (2007: 97).” Schneider et al. then divide target populations into following four groups as shown in the Figure 1 according to these two dimensions.

**Figure 1: Social Construction and Political Power: Types of Target Populations**

		<b>Constructions</b>	
		<b>Positive</b>	<b>Negative</b>
<b>Power</b>	<b>Strong</b>	<p><b><i>Advantaged</i></b>                      The elderly                      Business                      Veterans                      Scientists</p>	<p><b><i>Contenders</i></b>                      The rich                      Big unions                      Minorities                      Cultural elites                      Moral majority</p>
	<b>Weak</b>	<p><b><i>Dependents</i></b>                      Children                      Mothers                      Disabled</p>	<p><b><i>Deviants</i></b>                      Criminals                      Drug addicts                      Communists                      Flag burners                      Gangs</p>

**Source:** Schneider et al., 1993

The first group is “advantaged” which are positively constructed and politically powerful groups (elderly, veterans and scientists), and the second group is “contenders” which is negatively constructed but politically powerful groups (big business and labor unions). The third group is “dependents” which is positively constructed but politically weak groups (children, mothers and disabled), and the fourth group is “deviants” who are negatively constructed and politically weak groups (criminals and drug addicts) (Schneider et al., 1993: 337).

Schneider et al. provide how these the social construction and degree of political power of target populations influence public officials, therefore shapes the policy agenda and element of actual policy design, including goals to be achieved, problems to be solved, and policy tools as well as the rationales that legitimate policy choices (Schneider et al., 1993: 334 and Schneider et al., 2007: 95).

I found the social construction theory helpful to examine policy mechanism of food safety regulation in Japan where decision making process in has become more democratic: shift from bureaucrat-led decision-making to politician-led decision-making since 2001. In other words, the main players that affect Japanese food safety policy design are politicians and consumers (Arahata, 2006:5). Stakeholders of food safety issue between Japan and China are: Japanese consumers, media, government, and importing companies as well as Chinese exporter/producers (large and small) and government.

Framework and propositions of social construction theory provides help to explain policy planning mechanism of food safety regulations, element that affects the policy design, both in Japan and China by classifying all stakeholders into four groups and its propositions. The framework also suggests what is required to achieve effective food safety system between Japan and China policy and provide policy prescription as well.

## **I. Background and Literature Review**

### **Food Safety Risks**

Unsafe foods have caused many acute and life-long diseases, ranging from diarrheal disease to all kinds of cancer. In general, food safety risks that cause the foodborne-illness are classified to three main categories (Brackett, 2009: 46). The first category is the microbiological contamination, including *Salmonella*, *E. coli* O157:H7, and *Listeria*. Microbiological contamination is the major food safety risk of the food products produced in the US, causing about 76 million cases of foodborne illness, resulting in 325,000 hospitalizations and 5,000 deaths each year (WHO, 2002: 7).

The second category is chemical contamination, which includes pesticides residues, use of unapproved pesticides, veterinary drug and hormone residues, contamination by heavy metals (such as lead), trace elements and toxins, and overuse of food additives. These chemicals may cause many harmful effects to humans, “including *carcinogenic*, *teratogenic* and *mutagenic* effects; allergic reactions; and increased resistance of bacteria to antibiotic treatments (Wang et al., 2009: 425).” The third category is physical contamination, which includes “anything from glass to rocks” that is not part of the food (Brackett, 2009: 46).

### **The SPS measures and the CAC -The safety of food defined by legal term-**

In the context of expanding global food trade, insuring the safety of food product imports is the basic requirement for the stable food trade relations as well as for the people’s health and life. The Sanitary and Phytosanitary (SPS) measures is an international agreement under the World Trade Organization (WTO), which allows the member countries to set food safety standards in order to ensure their people are being supplied with safe food that is free from the risks described above. For example, “Maximum Residue Limits” (MRLs) is the most commonly used standard to regulate legally tolerated highest level of residues of agricultural chemicals such as pesticides, food additives, and veterinary drugs in food products (FAO and WHO, 2005: 66). If the level of agricultural chemical remained in food product exceed the MRLs set by the importing countries, the product is regarded to be violating the SPS measures and rejected at the time of import.

Meanwhile, trade conflict caused by difference in food safety standards have been one of the biggest issues in the recent international trading system (Roberts et al., 2003: 29). It has become a general concern for the exporting countries that the establishing stricter safety standard



under the SPS agreements has sometimes been used to protect domestic industry from foreign competition (Roberts and Unnevehr, p, 29). In order to prevent and solve this trade conflict and to secure fair trade as well as to protect people's health and life, the SPS agreement also requires all member countries to rely on science-based activities in establishing new safety standards such as MRLs or apply the Codex standards (Measures to be based on a scientific assessment of the risk).

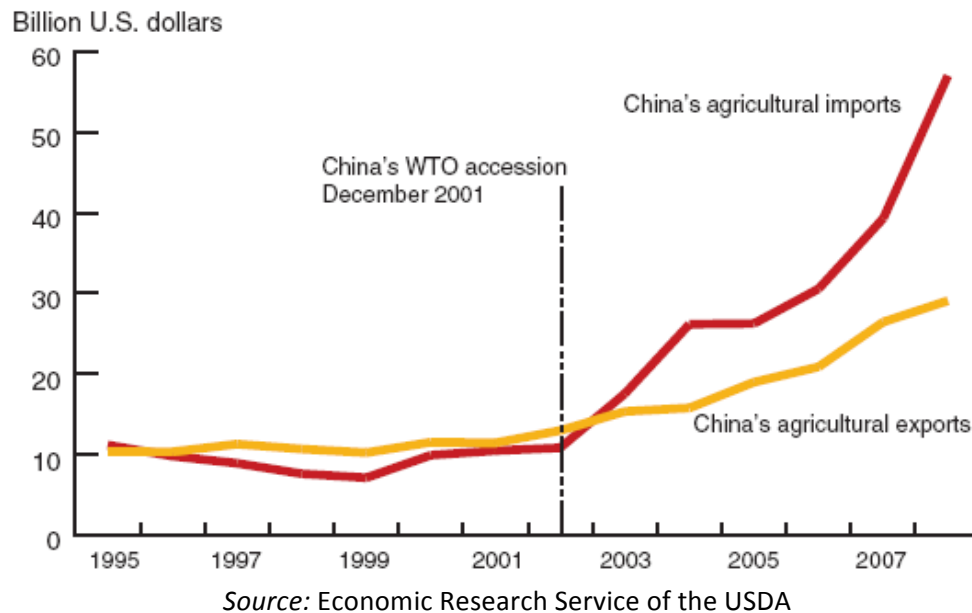
The Codex is the international food safety standards provided by the Codex Alimentarius Commission (CAC). The CAC is an intergovernmental organization established by the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) in 1962 to protect consumer health and to assure fair food trade by setting up international standard for food products (MHLW of Japan, p, 2).

### **China's Growth in the Agricultural Food Exports**

China, a large country with a population of 1.3 billion, has experienced a rapid economic growth, with an annual average growth rate of 9.7% in GDP (gross domestic product) from 1978 to 2006 (Cheng, 2007: 82). It has become an important member of the world economic community and played an important role in the global economy (The FAS of the USDA, 2009). The world's agricultural products market is one of the sectors in which China has played a significant role (Cheng, 2007: 89). One of the major factors of the growth is its entry to the WTO in December 2001. As shown in the Figure 2, China has very sharply increased agricultural imports and exports since 2001. China's total food exports reached 24.17 million tons in 2006, which is US \$26.7 billion in value (China White Paper, 2007).

However, the Figure 2 also shows that China's increase in agricultural imports outpaced its increase in agricultural exports. While the average annual growth rate of imports is 13.7%, the corresponding rate of exports is 7.5% (Cheng, 2007: 88).

**Figure 2: China's agricultural import and export value from 1995 to 2007**



Since its entry to the WTO in 2001, China has experienced several rejections of its food products. Most refusals are due to violations of food safety standards, the SPS measures. Among three categories of the food safety risks introduced above, China's food product imports mainly suffer from the SPS measures that regulate violation of the second category, chemical contamination: excessive pesticide residues, low food hygiene, unsafe additives, misuse of veterinary drugs, and other unacceptable ingredients such unsafe color additives (Becker, 2008: 11).

The import bans that resulted from the violation of safety standards have brought negative impacts on China's agricultural food exports. In 2001, about US\$7 billion worth of

Chinese exports were affected by SPS measures (Chinese Ministry of Commerce, 2005). Furthermore, the Ministry of Commerce of China reported in 2007 that annual loss of its exports due to the violation of the SPS measures has been US\$9 billion (Dong et al., 2007: 19). Empirical research has shown the negative and statistically significant effect of the higher food safety standards, which are imposed by importing countries, on China's exports of agricultural products (Chen et al., 2008: 101).

### **China's Dual System in Vegetable Production**

Rapid rise of Chinese agricultural export and a series of trade conflicts due to the violation of the safety standards attracted several studies on the Chinese food safety system. When arguing food safety system in China, it is important to emphasize its dual system. In general, China has two market segments for vegetable productions. The food safety control systems for these two markets are different (Zhang et al., 2009: 105).

The first segment is the domestic-market, where more than 99 percent of production volume goes, which requires lower level of quality and safety. China produced 540 million tons of vegetable in 2003, and 535 million tons went to domestic markets (World Bank, 2005: 12 and Calvin et al., 2006: 17). The other segment is the export-market where the production suppliers are limited due to high-standard product quality and safety requirement (USDA, 2003: 11). Scholars have argued that the food safety of vegetables produced for export, especially those for markets in developed countries, is higher than for the domestic market, especially since 2002 (Calvin et al., 2006: 21, Chen et al., 2003: 4, Oshima, 2004: 10, and World Bank, 2005: 32).

### **Japan's Vegetable Import from China**

Japan, which has been the world's largest net importer of food products, has increased the volume of vegetable product imports from 1.1 million tons in 1990 to 3 million tons in 2000 (the MHLW and Oshima, 2004: 2). China's share of these imports has increased since the early 1990s, growing from 40 percent in 1994 to 50.7 percent in 2001, and it reached to 80% in 2007 (Martin, 2007: 5 and Dyck et al., 2004: 68).

The increased volume of vegetable product imports from China can be explained by the heavy investment in its vegetable processing industry by the Japanese food processing and restaurant-chain industries, which are the biggest users of imported vegetable products. These investors are attracted by Chinese vegetable processing industry, which is able to produce convenient vegetable products in cheaper prices, due to the following four factors. First factor is China's geographical proximity to Japan, the second is its low labor cost, the third is its low production cost, and openness to the FDI (Foreign Direct Investment) is the fourth factor (Chen et al., 2003: 4, Calvin et al., 2006: 18, and Oshima, 2004: 8).

To take advantages of its geographical proximity, more than 65% of China's total vegetable exports are produced in six province of coastal region shown in the Figure 3. Shipping estimates from China to Japan is five days while it is 21 days from the US (Chen et al., 2003: 3). Most of the export companies in the coastal region producing vegetables to Japan are joint venture of Japanese importing companies and Chinese exporting companies, or branch of Japanese importing companies.

**Figure 3: China's Coastal Regions as Vegetables to Japanese Market**



China’s low labor cost is advantage in the processing labor intensive “value added processed products,” which are popular in the Japanese consumers and food-related industries. For example, onion, one of the top vegetable products imported from China, is imported to Japan with its skin peeled off for convenience (Chen et al., 2003: 4). As for the production cost, cost of producing onion in Chinese farms is much cheaper than those in Japan and the US farms as seen in the Table 1.

**Table 1: Cost of Producing Onion (per hecter in US dollar)**

Japan (Hokkaido)	The United States (Idaho)	China (Shandong)
\$20,901	\$5,110	\$3,650

Source: Chen et al., 2003

Consequently, China has been the leading supplier of fresh and frozen vegetables in Japan since 1991, replacing the U.S. (Chen et al., 2003: 3 and Miyoshi, 2009: 4). The Japanese food related industries and general consumers have benefited from cheaper and convenient vegetable products from China. Japanese food supply system today cannot be ensured without

imports from China. In this context, political power of Chinese vegetable products in Japan has been reviewed as powerful.

## **II. Case Study of the Spinach Safety Issue**

In this part, I will address the first question “Is imported food products from China is unsafe to eat?” through a case study of the spinach safety issue between China and Japan. First, I will describe the background of the spinach issue and Japanese government policy response to it. Second, regulatory responses by Chinese government to solve spinach safety issue will be examined. Then, background of food safety administration in Japan will be examined. Finally, findings of a case study will follow.

### **Background of Spinach Safety Issue**

In December 2001, the Japanese newspaper, *Sankei Shimbun*, published the report by the Chinese newspaper, *Beijing Youth Daily*, that excessive pesticide residues were found in over 47 percent of vegetables distributed in China’s “domestic” markets in November 2001 (Motegi, 2007 and Tsutaya, 2002).

The report received significant attention from Japanese consumers, and the MHLW, which manages the food safety of the imported food, responded to consumer’s concern over the Chinese vegetable products by implementing an “intensive test” for all “fresh vegetables” imported from China in January 2002 (Chen et al., 2003: 8 and Oshima, 2004: 12). In “intensive test”, the MHLW conducted monitoring test at a rate of 100 percent for agricultural chemical residues on every lot of Chinese “fresh vegetables”.

However, “frozen” vegetables were excluded from the intensive test. The Japanese government did not set MRLs for pesticides in its frozen vegetable imports, and for this reason,

no inspections for chemical residues were conducted at the time of importation. Therefore, the Japanese civil organization, the National Federation of Farmer's Movements, initiated private testing on the Chinese made frozen vegetables, applying the MRLs of fresh vegetables (0.01 ppm). In March 2002, their testing found high residues of pesticides *chlorpyrifos* in frozen spinach imported from China. Japanese media broadcasted the finding and reported the insufficient food safety regulation of Japan on imported frozen vegetable products.

The media report further increased public concern over food safety, and the government responded by including frozen vegetables into its import inspection according to the MRLs established for the fresh vegetables. They conducted 10 % of sampling inspection at Quarantine Station in March 2002 (Oshima, 2004: 12). After the inspection by the MHLW also found the excessive residues of *chlorpyrifos* in frozen spinach from China in April 2002 (0.016 ppm to 0.59 ppm), the government decided to inspect every lot of the vegetables imported from China.

Finally in July 2002, the Japanese government issued a voluntary ban on the frozen spinach import from China as a means of food safety management (Iwasaki, 2007 and MHLW of Japan, 2005, p, 8). By the voluntary ban, which is different from mandatory comprehensive ban, the Japanese government requested Japanese importing companies to voluntary refrain from import of frozen spinach from China. The voluntary ban, which was lifted after eight month in February 2003, was imposed again in three months later, after new inspections found excessive *chlorpyrifos* residues in frozen spinach from China (0.02 and 0.03 ppm) (MHLW and Oshima, 2004: 12). The voluntary import ban did not lift until June 2004.

**Table 2: Background of Spinach Safety Issue**

2001	
November	Chinese Newspaper Reported that 47% of vegetables in China's domestic market

	contains excessive pesticide residues
December	Japanese Newspaper Published Above Chinese Report
<b>2002</b>	
January 4	The Japanese government implemented 100% monitoring inspection on “fresh vegetables” from China
March 16	the National Federation of Farmer’s Movements found high residues of pesticides <i>chlorpyrifos</i> in “frozen spinach” from China (Applied MRLs for fresh spinach)
March 20	The MHLW implemented 10% monitoring inspection on “frozen vegetables” from China (Applied MRLs for fresh vegetables)
April 22	The MHLW implemented 100% monitoring inspection only for “frozen spinach” from China
April 22	Excessive residues of pesticides <i>parathion</i> was found in “frozen spinach” from China
May 14	High residues of pesticides <i>chlorpyrifos</i> in “frozen spinach” from China were found (0.016ppm -0.59 ppm)
July 10	Imposed Voluntary Ban
June 9-14	Sent off the MHLW officials for field investigation in China
September 7	Enforced the revised Food Sanitation Law: enabled the Japanese government to place comprehensive import ban
<b>2003</b>	
February	Lift Voluntary Ban
May 14	Residues of pesticide <i>chlorpyrifos</i> were found in “frozen spinach” from China (0.02 and 0.03ppm)
May 20	Imposed Voluntary Ban
<b>2004</b>	
June 17	Partially lift voluntary ban on qualified 27 exporting companies
<b>2005</b>	
August 10	Lift voluntary ban on additional 18 more exporting companies

### **Economic Loss from the Spinach Safety Issue**

For Japanese consumers, spinach has been a popular ingredient that can be used in appetizer, side dish, and main dish as well as *miso* soup, a traditional Japanese soup. Frozen spinach has become popular for its convenience: it allows consumers to cook in shorter time and also to use only the quantity needed in one meal.

However, the voluntary ban placed by the Japanese government in July 2002 negatively affected China’s spinach export market in Japan. Prior to the spinach incident, 99 percent of Japan’s frozen spinach import was from China (Dong et al., 2007: 20). As shown in the table 2



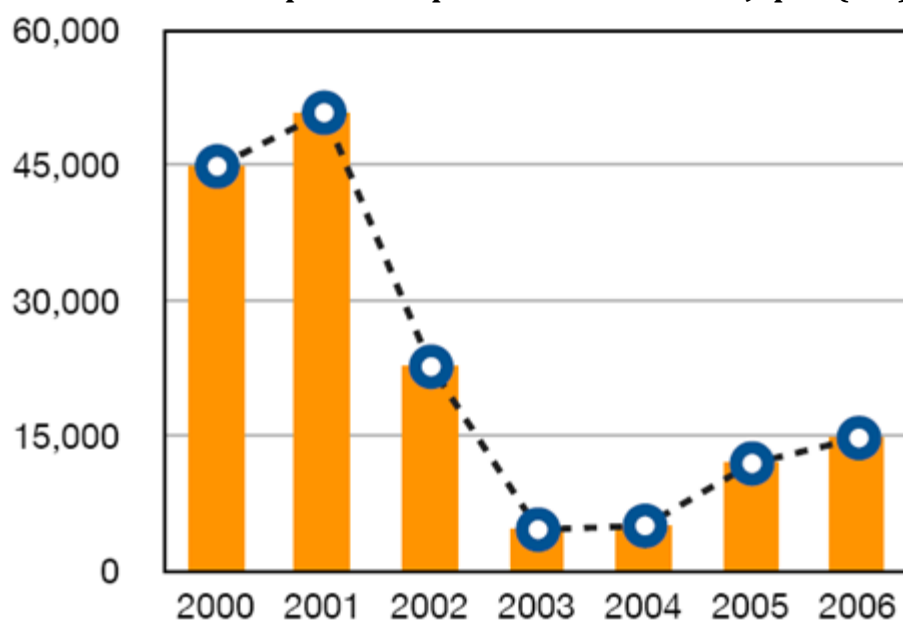
and the figure 4, Japan imported 50,873 tons of frozen spinach from China in 2001, worth US \$33.89 million in value (MHLW). After the voluntary ban placed, the total volume of Chinese frozen spinach imports fell to less than one-half, 22,658 tons, worth US \$14.3 million in value, in 2002. In 2003, it plunged to one-tenth of that of 2001, 4,555 tons which worth US \$3.95 million in value (JETRO).

**Table 2: The Volume of Spinach Imported from China (ton)**

Year	2000	2001	2002	2003	2004	2005	2006
Volume	44,907	50,873	22,658	4,555	4,974	11,903	14,732

Source: the MHLW

**Figure 4: The Volume of Spinach Imported from China to Japan (ton)**



The voluntary ban negatively affected the Japan-oriented food producers in China as well as the Japanese importing companies, resulting in export reduction and the bankruptcy of the business enterprises in China (Oshima, 2004: 7). This significant economic loss is one of the factors that drove Chinese government's quick responses to the spinach safety issue.

### More Strict Inspection on Chinese Food Products

In addition to voluntary ban and continual issue inspection-by-order on Chinese frozen spinach, Japanese government has increased the rate of monitoring inspection on imported food products from China since the spinach safety issue. Below is the table that compares the rates of monitoring inspection on imported food products by the Japanese government at the time of import.

**Table 3: Rates of Monitoring Inspection on Products by the MHLW, 2004-2008**

Year	Overall (%)	Food from China (%)	Food from the US (%)
2004	<b>10.5</b>	<b>16.7</b>	<b>7.4</b>
2005	<b>10.2</b>	<b>15.4</b>	<b>7.6</b>
2006	<b>10.7</b>	<b>15.7</b>	<b>9.2</b>
2007	<b>11.2</b>	<b>17.1</b>	<b>9.8</b>
2008	<b>11.0</b>	<b>18.6</b>	<b>9.1</b>

*Source:* the MHLW of Japan

As seen in the Table 3, Japan has implemented an intensive monitoring inspection program, with testing rates between 15 and 18 percent of food product from China (MHLW, 2004-2009). In 2008, the monitoring rate was 18.6 percent, which was two times of 9.1 percent, rate for the food products from the US. Thompson et al. describes Japan’s inspections as an “aggressive testing program” comparing to the one percent tested placed on Chinese food products by the U.S. authorities (Thompson et al., 2007: 14).

In addition, the Japanese government has implemented much stringer monitoring inspection for Chinese frozen vegetable products as shown in the Table 5. The rate reached to 38.7 percent in 2008.

**Table 5: Monitoring Inspection Rate of Chinese Frozen Vegetables, 2004-2008**

<b>Year</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
Rates (%)	26.3	25.4	23.5	24.1	38.7

Source: the MHLW of Japan

### **Response to the Spinach Safety Issue by China**

As well as Japan which have benefited by the imported vegetable products from China, China has benefited from the expanding vegetable products trade with Japan. China has become a major exporter of fresh and frozen vegetables through the success resulted from the heavy investments by the Japanese companies in its vegetable production industry. China's share of world vegetable exports in terms of the volume was 12 percent in 2001, which increased from 6 percent in 1992 (Chen et al., 2003: 3 and World Bank, 2005: 79). The increase in vegetable exports has played an important role in providing employment opportunities for farmers and increasing their income in China, especially in the coastal region (Cheng, 2007: 89). For example, in Zhejiang province, 75 % of vegetable produce are for Japanese market. China and Japan have established stable, mutually-beneficial relations in the trade of vegetable products (Miyoshi, 2009: 6).

In this part, I will describe how the Chinese government worked on the protocol to solve the problem after the Japanese government put the voluntary import ban on frozen spinach in July 2002.

After the voluntary import ban initiated by the Japanese government in July 2002, the Chinese government proposed an improvement strategy to meet the demand from the Japanese government for handling the issue properly. First, the Chinese government banned the use of pesticide *chlorpyrifos* for spinach exported to Japan in August, 2002 (MHLW). As for the frozen spinach in stock that were produced before August 2002, the Chinese government ensured

implementation of special inspections according to Japanese safety standards, and provided governmental-inspection stickers on the products that passed the inspection (Oshima, 2004: 12).

The General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China (AQSIQ) is the highest level governmental agency that has the overall responsibility for the management and supervision of safety of food products for export markets in China (Wang et al., 2009: 427). The China Entry-Exit Inspection and Quarantine Authorities (CIQ) is the local government administrations to quarantine, monitor, and supervise food products for export markets function under directly command of the AQSIQ. The CIQ has 35 branches in every province, autonomous region, municipality, and main port.

When the spinach issue happened, the AQSIQ consulted with the Japanese government (the MHLW) through the several director-general level talks and stepped up supervision of frozen spinach preparation by establishing special monitoring systems for frozen spinach exported to Japan as follows.

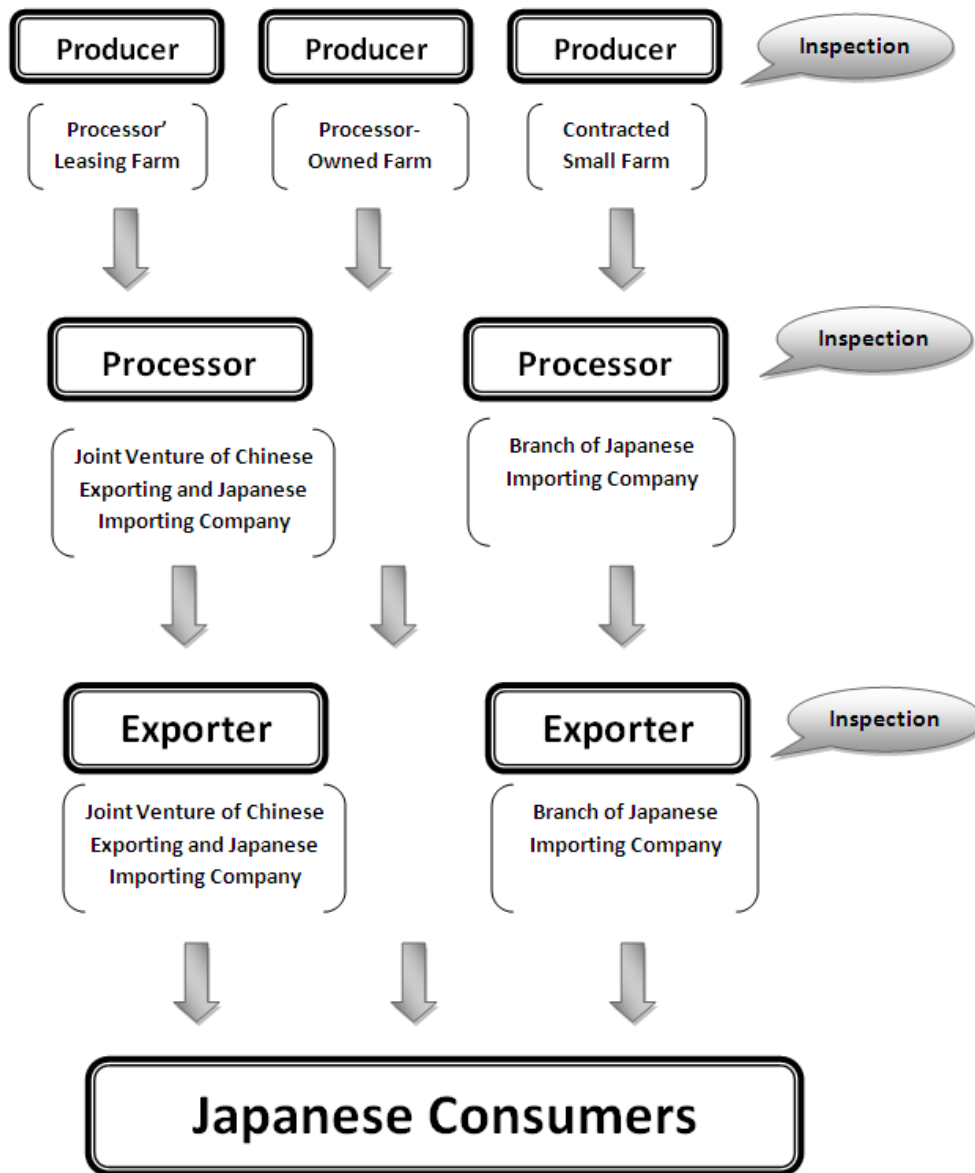
The AQSIQ required processing companies following specific measures to be eligible to export frozen spinach to Japan:

1. Limit the farms to produce the exporting spinach only to the leased, company-owned, or contracted farm to enable processing company direct management of the use of appropriate pesticides
2. Establish companies' own inspection centers for pesticide residues
3. Perform inspection for pesticide residues at three stages: before harvest, after processing, and before shipping

These measures developed the safety guarantee system, called "vertically integrated supply chain," which enables the strict traceability system of food products as seen in the Figure

5 (Chen et al., 2003: 3).

**Figure 5: vertically integrated supply chain**



Under the “vertically integrated supply chain,” processing companies divide their leased, company-owned, or contracted farms into blocks and build a registry to record the whole processing of produce. When Japanese consumers buy the products “vertically integrated supply chain” at the supermarket stores, they can open the homepage of importing company and input the bar code to trace, where, how, who, and when the products are produced in detail (Chen et al.,

2003: 9). In addition, the AQSIQ conducts inspection on each lot of spinach before exporting to Japan.

Furthermore, the difference of safety standard between China and Japan has been solved. While Japan's level of MRLs for *chlorpyrifos* to spinach was 0.01 ppm, corresponding MRLs in China was 1.00 ppm. To solve the problem, the CIQ agreed to apply Japan's level of MRLs, which is 100 times stricter than China's standard in times of inspection (MAFF, 2005: 8 and Oshima, 2004: 12).

The Japanese government sent inspectors to China to conduct field survey at exporting companies and created "approved supplier lists" (Thompson and Hu, 2007: 14). Only processing companies who are authorized by Japan and also meet the above requirements are registered to the AQSIQ to produce the frozen spinach for Japan.

In June 2004, with the efforts of AQSIQ, the Japan government partially dropped the import ban on frozen spinach processed by 27 firms that the Chinese and Japanese had both approved (MHLW and World Bank, 2005: 32). In August 2005, Japan approved 18 more companies to export frozen spinach to Japan (MHLW). As of 2009, only 45 Chinese frozen spinach producers had been certified by AQSIQ and Japan to be eligible to export to Japan (MHLW).

The Japanese and Chinese governments, plus the exporting and importing companies themselves, worked together to establish the food safety guaranty system to solve the spinach safety issue, and established "vertically structured supply chain."

#### **Table 6: Summary of Response to the Spinach Safety Issue by China**

- Banned the use of pesticide *chlorpyrifos* for spinach exporting to Japan
- Provided improving plan: establishment of “vertically integrated supply chain”
- Conducted inspection on each lot of spinach before exporting by the local CIQ
- Applied Japanese MRLs for *chlorpyrifos* (0.01ppm) in times of inspection

### **New Food Safety Regulation on Vegetables for Export**

China has recognized a vertically integrated food supply chain, which links producers, processors, distributors and retailers, as an efficient management system to ensure the food safety, and at the same time to meet the changing demand requirements of trading partners. Parallel with a series of practical measures to solve the spinach safety issue, the Chinese government reviewed its overall food safety regulations on vegetables for export. The Chinese government’s actions in ensuring safety of frozen spinach were applied to overall vegetables for export market. The Chinese authorities enacted the two new regulations to ensure the traceability system.

The first regulation is “*Import and Export Vegetable Inspection and Quarantine Method*”, enacted in August 2002. The regulations require exporting companies to follow measures to be authorized to export, and require the CIQ to supervise all activities from processing to shipping.

Followings are the procedures regulated by *Import and Export Vegetable Inspection and Quarantine Method*.

1. The vegetable farming lands should be registered with the local CIQ. The basic condition and management must be met with the CIQ requirements.
2. The establishments for processing or packing facilities for vegetables should be registered with the CIQ as well. These establishments must meet the *Sanitary Requirements for Export*

*Food Manufactories*, which regulates the establishment of the processing or packing facilities

3. CIQ regularly will inspect the registered processing/packing facilities and farm bases.
4. Prior to shipment for export, the products should be inspected lot by lot and also sampled for testing according to the requirements of the importing country set by the bilateral agreement.

Under the new regulation, only qualified cargo will have relevant certification by CIQ. As of 2007, China has 448,000 food production and processing companies. According to a report by China's State Council, only 12,714 of 448,000 food processing companies in China were approved to export food (China White Paper, 2007 and Rice: 3).

The second regulation is "*The Details for Registration of Vegetable Planting Bases for Export*," enacted in January 2003. According to the regulation, the companies that produce fresh or frozen vegetables for export markets are required to own farms that are at least 20 hectares in order to enable direct management and control of all the production processes. To meet these government requirements, Chinese export companies started to lease small farms from the individual farmers to create sufficiently large farm bases for the export market. As of 2007, only 380,000 hectares out of 121 million hectares of farmland in China were approved to produce food products for export market (China White Paper, 2007 and Gale et al., 2009: 20).

### **More Actions on Food Safety Management on Vegetable Export**

The Chinese government implemented additional programs to reinforce its food safety system for export markets.

First, it has been argued that many food safety standards and regulations in China were outdated and inconsistent with international standards. With respect to restrictions on pesticide



residues, while Codex has over 2,500 MRLs, China has only 484 MRLs, of which fewer than 20% conform to Codex levels (Dong et al., 2007: 20).

To solve the outdated safety standard, China has worked toward revision of all existing food standards to form scientifically based and rational food standards system, aiming to produce comprehensive enhancement of China's food standards related to food chemical residues (Wang, et al., 2009: 428). In addition, the Chinese government set the bilateral agreements with importing countries to ensure compliance with higher safety standards set by them. Furthermore, in September 2004, the AQSIQ started a new *pesticides residues monitoring program* for processed food for exports. The program is intended to strengthen monitoring of pesticides, including the substance unauthorized and restricted by the importing countries in addition to the one unauthorized and restricted in China (World Bank, 2005: 60).

Second, as for inspection, since September 2007, the Chinese government has required all exporting food products to have the quality guarantee label to strengthen its inspection system. Only food products that passed inspection of quality and pesticide residue by the CIQ will have the quality guarantee label, and the products without the label are not allowed to export (Sato, 2008: 30). In addition, the CIQ enhanced the quarantine inspection at the port before the exportation. Monitoring inspection at the rate of 20 percent for all exporting food products is conducted. The rate of monitoring inspection will be increased to 50 percent for the food products produced by the company which is found to violate the Chinese food safety standard. Furthermore, The CIQ deals with the food products from the company that frequently violates Chinese food safety standard with monitoring inspection at rate of 100 percent (Sato, 2008: 34).

**Table 7: Summary of Chinese Regulatory Response**

**Strengthened Traceability System** “vertically structured supply chain”

Enacted *Import and Export Vegetable Inspection and Quarantine Method* (August, 2002)

Enacted *The Details for Registration of Vegetable Planting Bases for Export* (January, 2003)

**Food Safety Standard**

Set Bilateral Agreement with importing company to ensure compliance with higher standard

Implemented new *pesticides residues monitoring program*(September, 2004)

**Enhanced Monitoring System**

Started quality guarantee label system (September, 2007)

Implemented 20 to 100 percent of monitoring inspection at the time of export

**New Emerging Issues**

Under the enactment of two new food safety regulations introduced above, which support establishment of “vertically structured supply chain,” new issues have emerged in China. First issue is an exclusion of small processors from export markets. The second issue is an unreasonable loss of small farmers through enactment of “*The Details for Registration of Vegetable Planting Bases for Export.*”

First, small producers that do not have sufficient property to invest the equipment have been excluded from the export markets through an enactment of the *Import and Export Vegetable Inspection and Quarantine Method* (Fujishima, 2005). As mentioned above, China has 448,000 food production and processing companies. Among them, 353,000 producers are small processing companies with fewer than ten employees, thus only 12,714 of 448,000 food processing companies in China that have enough equipment and fund are qualified to produce food for export market (China White Paper, 2007). While small vegetable processing companies consist 80 percent of overall vegetable processing companies in China, their market share is only 9.3% of all vegetable production in China (China White Paper, 2007). The structure in which only large producers are able to enjoy the highly profitable markets has emerged under the stringent food safety system. As a result of the strict implementation of “vertically integrated

supply chain” for the export market, those small producers that are not able to supply enough technical equipment to inspect the pesticide residues have been excluded from the highly profitable export market (World Bank, 2005). The new food safety regulation created the system which limits the exporters to large producers, which are “elite minority (Gale et al.: 20).”

### **Background of Japanese Food Safety Administration**

In this part, I will examine background of Japanese food safety administration and its response after the spinach issue occurred.

### **The Environment of the Food Safety Administration in Japan**

Before examining responses, the environment surrounding the food safety administration should be illustrated as a factor that affected the policy designs over spinach safety issue. When the spinach safety issue happened in early 2002, Japan had already experienced a series of food-related scandals regarding both domestic and import products, and Japanese consumers had lost faith in its government’s foods safety management.

One important food-related scandal had occurred in August 2000, when a dairy company *Yukijirushi* caused massive food poisoning that affected 14,700 people. *Yukijirushi* was a trusted domestic company that had a long history in Japan, so the incident was a tremendous shock for the people across the country. In September 2001, the first case of Bovine Spongiform Encephalopathy (BSE) was found in domestic Japan and frightened the Japanese public (Miyagawa, 2009: 1). In addition, the MHLW reported that a Japanese woman died after taking the *fenfluramine* contaminated diet pills, imported from Guangdong Province in China in early 2002 (MHLW, 2002 and Martin, 2007: 16). In addition, in July 2002, unregistered agricultural chemical use was found in 44 prefectures in Japan (Ministry of Agriculture, Forestry, and

Fisheries of Japan (MAFF), 2002). For example, it was reported that unregistered pesticides *Captafol* and *Cyhexatin* had been sold and used in various parts of Japan (MAFF, 2002).

These food-related scandals become increasingly publicized in Japan and already received considerable attention as an important social issue (Kamisato, 2005: 295). Therefore, the impact of the spinach safety issue on Japanese consumer was significant in the wake of these earlier food-related scandals. The Japanese people, who had believed that their regulatory system guaranteed the safest food in the world, lost confidence in the nation's food safety management and regulatory systems.

### **Japanese Food Safety Regulation on Imported Food Products**

With self-sufficient rate of 40 percent in terms of calorie base, one of the lowest rates in developed countries, Japan has relied 60 percent of its food supply on imported food products. The Japanese government recognizes the safety of imported foods as an important issue in order to ensure the "safety of diet" of its people (the MHLW).

The Ministry of Health, Welfare and Labor (the MHLW) is the highest level of government agency that manages the food safety of overall food products distributed in Japan. Under the supervision of the MHLW, the Food Sanitation Law has been the main regulation that manages the food safety system. According to the Food Sanitation Law, there are three kinds of food sanitation inspections conducted at the time of imports at the executive agency, Food Sanitary Quarantine Station (the FSQC) of the MHLW. Only the food products that passed inspections can be imported and circulate in domestic market in Japan. These inspections are: the document inspection, the monitoring inspection, and the inspection-by-order.

The document inspection is conducted on each shipment entering the country. According to Article 27 of the Food Sanitation Law, all importers are required to submit food import notification, called “notification form for importation of Foods, etc.,” to the FSQC. Once the form is turned in, food sanitation inspectors at the quarantine stations inspect the document to examine whether the products (cargo) comply with the Food Sanitation Law. The following parts will be examined: 1) the manufacturing standards, 2) the use of additives, 3) inclusion of poisonous or hazardous substance, and 4) the previous record of sanitation problems. Once the products pass the document examination and inspectors prove the product’s compliance with the Food Sanitation Law, the products will be authorized for the distribution in Japan (MHLW).

The monitoring inspection is conducted on randomly sampled food products according to Article 26 of the Food Sanitation Law in order to grasp the situation of sanitation and safety of imported food products. The MHLW bears the cost of the monitoring inspection. The food products can be distributed in Japan before the result of the monitoring inspection become available. Therefore, once the violation is found in the monitoring inspection, the government issues a recall of the products. Before the spinach safety issue happened, Japan conducted the monitoring inspection at the rate of 10 percent.

The inspection-by-order is conducted for the food product that is issued an inspection order. Inspection order is issued by the MHLW when product is suspected to have a high probability of violating the Food Sanitation Law such as the product that has high record of the violation of the document inspection or the monitoring inspections (Jones, 2008: 4). Food product that is issued an inspection order is required to be inspected each time of importing. Unlike the monitoring inspection, cost of the inspection-by-order is imposed on importing companies. Also, when inspection order is issued, the import procedure will be suspended until

the product's compliance is proved by the inspection. That is, the product's entry to Japan delays about one to three weeks (Jones, 2008:4). If the cargo has been judged to be not compliance with the law, the products cannot be imported to Japan.

At the time of the inspections at the quarantine stations, violations of Article 11 of the Food Sanitation Law, which regulates MRLs for agricultural chemicals, account for over 65 percent of all violation of the safety standard by the imported food products, which reached to 72 percent in 2007 (MHLW, 2008: 2).

### **The Loopholes of the Japanese Food Sanitation Law**

When the spinach safety issue occurred in early 2002, the insufficiency of the food safety regulations on vegetable imports was revealed. Followings are three loopholes revealed in the aftermath of the spinach safety issue.

First, as of 2002, the Food Sanitation Law set MRLs for only 283 kinds of agricultural chemicals, while over 700 kinds of agricultural chemicals are used in worldwide. Second, the Food Sanitation Law adopted the "negative list" system on MRLs. Under the "negative list" system, there was no way to prohibit the distribution of food products that contain high residue of the chemical for which no MRLs were established. In other words, the Food Sanitation Law was not able to control unregistered pesticides. Finally, as already described above, the spinach safety issue revealed that Japan did not set any food safety policy regulating chemical residues in imported frozen vegetables despite the fact that the frozen vegetables account for one third of its vegetable imports (Oshima, 2004: 12). The MRLs were applied only to the fresh food products and were not applied to frozen food products. In 2001, the 0.72 million tons of frozen vegetable products were imported and distributed in Japan without any inspection for chemical residues.

Given the fact that large amounts of imported foods were frozen food, the Food Sanitation law was therefore outdated and ineffective to provide safety food system to the Japanese consumers when the spinach safety issue occurred. The spinach safety issue revealed serious problem in Japan's food safety regulation, which concealed for long time (Tsutaya, 2002).

### **Response of Japanese Government after Spinach Safety Issue**

After the spinach safety issue revealed the insufficiency of the regulations, the Japanese government amended the Food Sanitation Law to improve its food safety regulation of overall imported food products.

### **Comprehensive Import Ban**

In September 7, 2002, the Japanese government enacted revision of the Food Sanitation Law to allow the government to impose a comprehensive import ban on food products from countries, regions and companies that have record of repeating violation of the Food Sanitation Law (Martin, 2007: 16 and Jones, 2008: 4). For more detail, a comprehensive import ban is placed on the products that have a rate of violation of greater than five percent in time of inspection by an inspection order (Jones, 2008: 4). The revision of the Law included an increase in the penalty for an increasing in Japanese importers who imported the banned food products. The violators are subject to imprisonment of up to six months or a fine of up to \$3200 (Martin, 2007: 16).

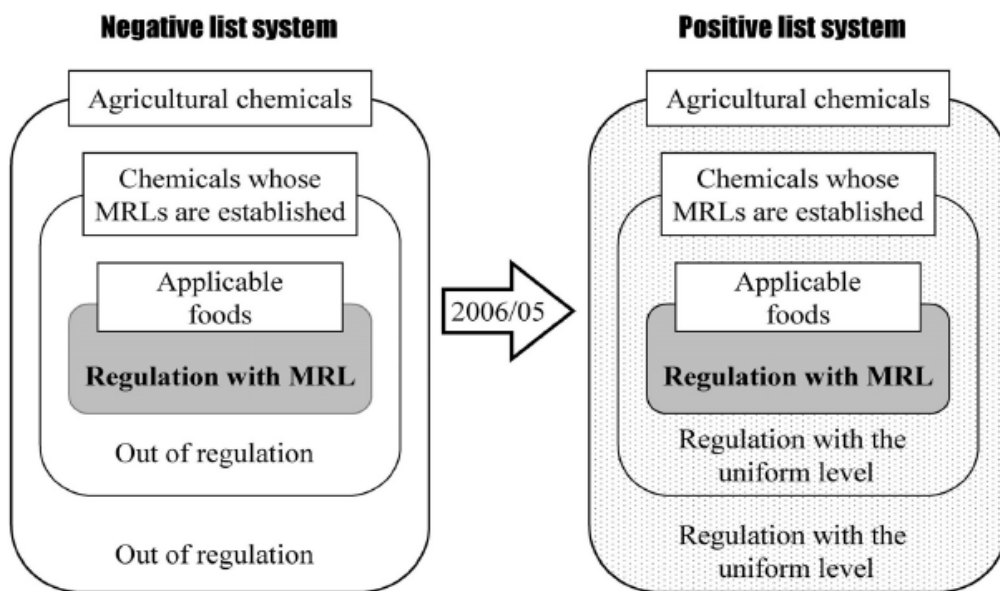
### **Introduction of Positive Lists**

In May 2003, in response to the public concern over the insufficient regulation on chemical residues in imported vegetables, the Japanese government declared that it would amend the Food Sanitation Law to establish "positive list" system in three years, replacing the then-

current “negative list” (MHLW, September, 2002). Under the new “positive list” system, for a product containing a chemical for which there are no establishing MRLs, the uniform level of 0.01ppm would be applied as MRLs. That is, “positive list” system would allow the Food Sanitation Law to be able to control all kinds of agricultural chemicals.

The “positive list” new regulations on the MRLs of agricultural chemicals became effective on May 29, 2006. As shown in the Figure 6, all food imports entering Japan are subject to regulation under the “positive list” system, and food products that contain residues exceeding the MRLs cannot be imported to Japan because they violate the Food Sanitation Law (Fujita, p, 5).

**Figure 6: Negative List and Positive List**



Source: The MHLW

In addition, Japan established new MRLs for about 800 kinds of agri-chemicals, a large increase from the previous MRLs for 283 kinds. Finally, the amendment of the Food Sanitation



Law included the application of these MRLs to frozen vegetables as well as to fresh vegetables. When the spinach issue happened, the government dealt with the issue by temporary adoption of the MRLs of fresh vegetables to frozen vegetables. This temporary adoption became the official regulation in May 29, 2006. These revisions allow the MHLW to test for more agricultural chemicals than before. These new revision of the food safety regulation has improved Japan's safety assurance system on imported food products.

### **Summary of Policy Response to Spinach Safety Issue by the Japanese Government**

- Placed Voluntary Import Ban
- Issued Inspection by Order  
(100 percent monitoring inspection on frozen spinach from China)

### **Summary of Revision of the Food Sanitation Law**

- Enacted Comprehensive Import Ban
- Established stringent MRLs for the agricultural chemicals through introduction of positive list

### **Consequent Result of Regulatory Response of both Governments**

Currently, vegetable products for Japanese market are produced under vertically structured supply chains. It has become effective food safety system in China's overall food products for Japanese export market, especially frozen spinach. As a result, since 2004, no violation of frozen spinach from China has been reported (MHLW, 2008). Also, as shown in the Table 8, the violation rate of the Food Sanitation Law of Chinese frozen vegetables has remained low between 0.23 and 0.47 percent since 2004 according to the report by the MHLW (MHLW, 2005-2009).

### **Table 8: Violation Rates of Chinese Frozen Vegetables, 2004-2008**

Year	2004	2005	2006	2007	2008
Rates (%)	<b>0.33</b>	<b>0.23</b>	<b>0.30</b>	<b>0.47</b>	<b>0.23</b>

Source: the MHLW of Japan

In addition, the Japanese government reported that the violation rate of all Chinese food products decreased from 0.59 percent in 2004 to 0.29 percent in 2008 (MHLW, 2005 and 2009). Here, I analyze the MHLW data on violation rates of food products from China and the US to emphasize the lower violation rates of Chinese food products. The Table 9 show the important fact that the violation rate of Chinese food products has been lower than that of the products imported from the US since 2004, except for 2005 (MHLW, 2009).

**Table 9: Comparison of Violation Rates of imported food products, 2004-2008**

Year	Overall (%)	Food from China (%)	Food from the US (%)
2004	<b>0.61</b>	<b>0.59</b>	<b>0.63</b>
2005	<b>0.49</b>	<b>0.44</b>	<b>0.39</b>
2006	<b>0.77</b>	<b>0.58</b>	<b>1.30</b>
2007	<b>0.60</b>	<b>0.40</b>	<b>0.64</b>
2008	<b>0.59</b>	<b>0.29</b>	<b>0.74</b>

Source: the MHLW of Japan

Furthermore, the violation rates of Chinese food products in the other main importing countries remained low. For example the violation rate of Chinese food products in the US and the EU in 2006 were 0.8 percent and 0.1 percent, respectively (China White Paper, 2007 and the UN, 2008: 18).

Given the fact that Japan has conducted much stricter inspection on Chinese food than products from any other countries, the lower violation rate of China should be highly appreciated by the Japanese consumers.

## **Findings and Discussion**

Followings are the summary of findings of a case study of spinach safety issue.

1. Chinese government, Chinese producers, and Japanese importers established “Vertically structured supply chain” for spinach productions for Japanese market in which only qualified companies are able to produce frozen spinach for Japan.
2. Japanese government strengthened inspections on Chinese frozen Spinach: Chinese frozen spinach has been subject of order inspection, that is, 100 % of monitoring inspection.
3. “Vertically structured supply chain” are established for other vegetable productions for Japanese market in addition to frozen spinach.
4. Japanese government reinforced its food safety regulation through revision of food sanitary regulations (comprehensive import ban and introduction of positive lists)
5. Chinese food products have kept lower violation rate of Japanese food safety standards than those from the US.

First, these findings tell us that Chinese bureaucrat has competence to react effective and quick way (The Chinese government has improved its food safety system, through quickly responded by establishing regulations that ensure the traceability system of the food productions).

Second, these findings partly answer the first research question “Are imported food products from China unsafe to eat?” The answer is: “In addition to frozen spinach and other vegetables, food safety of overall Chinese food products is improved and is higher than those from the US, at least by legal term.”

With complete lift of voluntary ban in 2005, spinach safety issue seemed to be solved. However, as of 2008, Japanese government allows only 45 companies in China to produce frozen spinach. In addition, frozen spinach that is produced in 37 of these 45 companies is

remained to be subject of inspection-by-order (People's Daily, January, 2008). Issue of order inspection has slowed custom processing speed and also increased the export costs. As for speed, it sometimes takes three months for Chinese frozen spinach to display in Japanese stores since it arrives at the Japanese port due to slower custom processing. As for cost, inspection-by-order imposes about \$8000 per container on importing company (Jones, 2008: 5). The strict regulations have disrupted trade environment of Chinese frozen spinach and prevented mutually beneficial trade relations. The spinach safety issue is not solved. Then, what is required to solve spinach safety issue?

According to FAO and WHO, effective food safety system is the system that improves public health, maintains consumer confidence in food system, and provides regulatory foundation for international food trade (FAO and WHO, 2005: 3). The paper assumes that food safety issue between China and Japan will improve when they establish effective food safety system. Based on the assumption, the rest of paper address the research question, "what is required to establish effective food safety system in food trade between China and Japan?" In next part, the paper will examine the policy mechanisms and discuss the policy prescription to achieve effective food safety system, drawing on social construction of target population theory.

### **III. Policy Planning Mechanism in Japan**

In this part, I will analyze policy planning mechanism of food safety regulation in Japan. Specifically, I will analyze the factors that drove Japanese government to choose "voluntary ban" and continual inspection-by-order on Chinese frozen spinach as policy tools. Schneider et al. argue that social construction of target population affect policy designs including policy tools (Schneider et al., 2007: 95). In this study, target population is Chinese vegetables, thus the theory suggest that social construction of Chinese vegetable affect policy designs of food safety

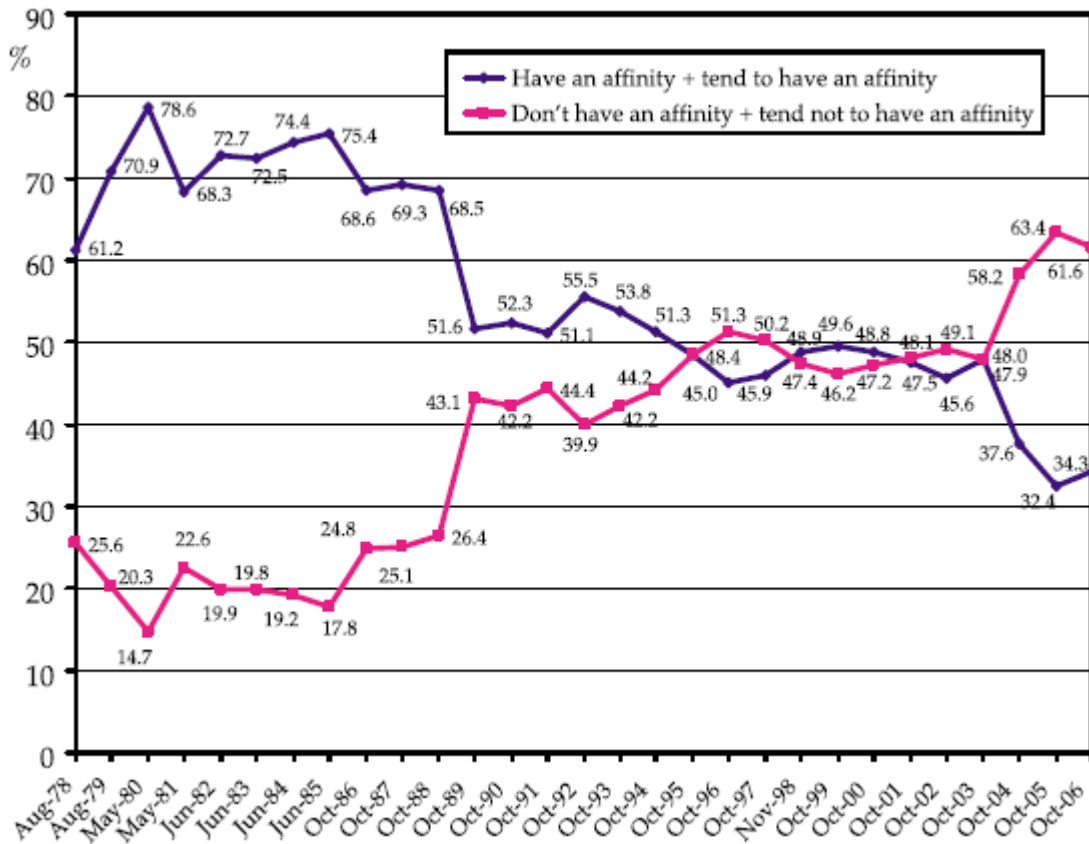
regulations. Here, I will apply framework of social construction theory and determine the social construction of Chinese vegetable. As mentioned above, since Japanese rely on imported food from China and its food supply system today cannot be ensured without imports from China. Therefore, Chinese vegetable is categorized as politically strong group.

Next, as illustrated above, safety of Chinese food products, especially frozen spinach, has been proved as well as Chinese government's effectiveness. Through Japanese strict policy implementation on Chinese food products coupled with China's efforts to develop food safety assurance system by establishing "vertically structured supply chain," safety of overall food products produced in China have reached higher level required by Japan. Therefore, Chinese vegetables should be categorized by the Japanese consumers as positively constructed group (trustworthy). Therefore, Chinese vegetable should be categorized as "advantaged" that has positive social construction and strong political power.

However, considering the burdens placed on Chinese vegetable, I assume that the policy design of food safety regulation in Japan is affected by the incorrect social construction of Chinese vegetable. In my analysis, I will use public survey data to examine the social construction of Chinese vegetable. Although the details are not discussed, Schneider et al. argue that social constructions can be identified and measured from governmental surveys, media and general public (Schneider et al., 1993: 346). According to the survey conducted by Frozen Food Association, Japanese consumers' perception of the Chinese vegetables remains to be "untrustworthy" as of 2009 (Frozen Food Association, 2009). In addition, according to the survey conducted by Tokyo-Beijing Forum, Japanese consumers have regarded Chinese food products as "unsafe" or "dangerous" to eat and recognized safety of Chinese food products as a primary reason that has hindered the development of bilateral relationship as mentioned above

(Tokyo-Beijing Forum, 2009). Furthermore, according to the annual survey conducted by the Japan's cabinet office, friendly feelings of Japanese to China were at their lowest level in 2005 since the government started polling on the topic in 1978 as seen in the Figure 7.

**Figure 7: Japanese Opinion toward China**



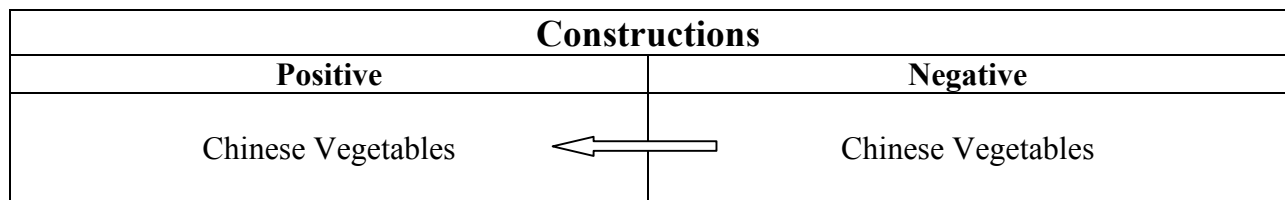
Source:

The percentages of people who do not have or tend not to have an affinity for China have increased since 2003, after spinach safety issue happens. Here, I assume that negative perception of China would lead negative perception toward Chinese vegetables. Based on these three surveys, it seems that negative perceptions of Chinese food products strongly implanted in Japanese consumers and create incorrectly categorize Chinese vegetables as “contenders” group.

Based on three surveys as well as the burdens placed through intensive monitoring rate on Chinese food products, especially on frozen spinach, this paper find that negative perceptions of Chinese food products are strongly embedded in Japanese consumers and create incorrectly categorize Chinese vegetables as “contenders” group.

The social construction theory suggest that incorrect perception of Chinese vegetable as “contenders” affected the policy design of food safety regulation of Chinese vegetable and resulted in stricter regulation, which caused unnecessary trade dispute and social unrest. To improve the food safety issue between Japan and China, to correct the Japanese consumers’ perception of Chinese vegetables is necessary. The social construction framework suggests that construction of Chinese vegetable should begin to shift from untrustworthy to trustworthy so that they can be reconstructed by the Japanese consumers to fit in to the “advantaged” category. The correct social construction will contribute to establish effective food safety system of imported food.

**Figure 8: Suggested Shift of Social Construction of Chinese Vegetables**



**Other Factors Affected Policy Design**

As another factor that drove Japanese government to choose stricter regulation on Chinese frozen spinach, the social construction framework also suggests that it is government’s intention to shift social construction of itself from negative to positive through strict regulations on Chinese food products. The Japanese government was fully aware of negative social construction of itself in the wake of a series of food related scandals. Spinach safety issue

revealed the loopholes of Japanese food safety regulations. Coupled with the environment surrounding food safety administration in which a series of food related scandals happened as described above, the Japanese government lost its credit to general public. Considering these environment, the social construction theory suggests that it is Japanese government's intention to change social construction of itself from negative to positive group by implementing stricter regulations on Chinese vegetables which already have negative social construction among Japanese consumers. Japanese consumers regarded its government as “contenders” group (untrustworthy).

Schneider et al. argue that the contenders group tends to receive hidden benefit and empty burdens. However, they also argue that policy designs for contenders may depend on the extent of media and public attention. When public attention increase, then policy tend to shift toward more burdensome side (Schneider et al., 1995: 338). The theory suggests that the increased attention over the food safety of Chinese food products affected the Japanese government placed stricter food safety regulation on Chinese food, contenders group which usually receive empty burdens.

As seen in the Figure 9, which applies the framework of social construction to the spinach safety issue in Japanese consumer perspective, policy planning of Japanese food safety regulation is affected by social construction of Chinese vegetable, which is incorrectly categorized as “contenders” group by Japanese consumers. This incorrect perception prevented to solve spinach safety issue and cause trade dispute through continual strict regulations.

**Figure 9: Classification of Stakeholders into Social Construction Framework (Japanese Consumers Perspective)**



		<b>Constructions</b>	
<b>Power</b>		<b>Positive</b>	<b>Negative</b>
	<b>Strong</b>	<b>Advantaged</b>	<b>Contenders</b> <u>Chinese Vegetables</u> Chinese Producers Chinese Government Japanese Government Japanese Importers
	<b>Weak</b>	<b>Dependents</b> Japanese Consumers	<b>Deviants</b> None

**IV. Policy Planning Mechanism in China**

Next, I will analyze policy planning mechanism of food safety regulation in China. In other words, the factors that drove the Chinese government to respond to spinach safety issue quickly and effectively by establishing regulations that ensure the traceability system of the food productions for export market (vertically structured supply chain).

Schneider explains that the group which is “positively constructed” has positive images such as “trustworthy, deserving, honest, and public-spirited” which contribute to achieve national economic goal (Schneider et al., 1993: 335). In China, exporter/producer can be classified as “advantaged” group since it has created employment, contribute to prevent social unrest caused by unemployment, and contributed to economic growth of China (Thompson et al., 2007: 6). The advantaged group tends to receive high benefit and low burdens. However, in spinach safety issue, Chinese government placed strict burdens to exporter/producer through establishment of two regulations that support vertically structured supply chain. The theory suggests that in the wake of spinach safety issue, the social construction of Chinese exporter has shifted from positive to negative as shown in the Figure 10. The characteristic of Chinese exporters/producers

has become a negative, which jeopardize economic growth and its image by Japanese consumers through violating Japanese food safety standard.

**Figure 10: Classification of Stakeholders into Social Construction Framework (Chinese Perspective)**

		<b>Constructions</b>	
		<b>Positive</b>	<b>Negative</b>
		<b>Advantaged</b>	<b>Contenders</b>
<b>Power</b>	<b>Strong</b>	Chinese Exporter Japanese Importer Japanese Consumers	Chinese Exporter/Large producer
	<b>Weak</b>	<b>Dependents</b> Small Producer	<b>Deviants</b> None

Therefore, in policy planning mechanism of food safety regulation in spinach safety issue, Chinese government recognized Japanese consumers as politically strong and socially positive group. Through establishing strict regulations, Chinese government send message to Japanese consumers that it is a responsible nation. I think that China’s national pride and intention to be a responsible country in international community as well as concern over economic impacts was the factors that drove China to quick and effective respond to spinach safety issue.

### **V. Policy Prescription**

In this part, I will discuss policy prescription to establish effective food safety system for both Japan and China, drawing on social construction of target population theory.

## **Policy Prescription to Japan**

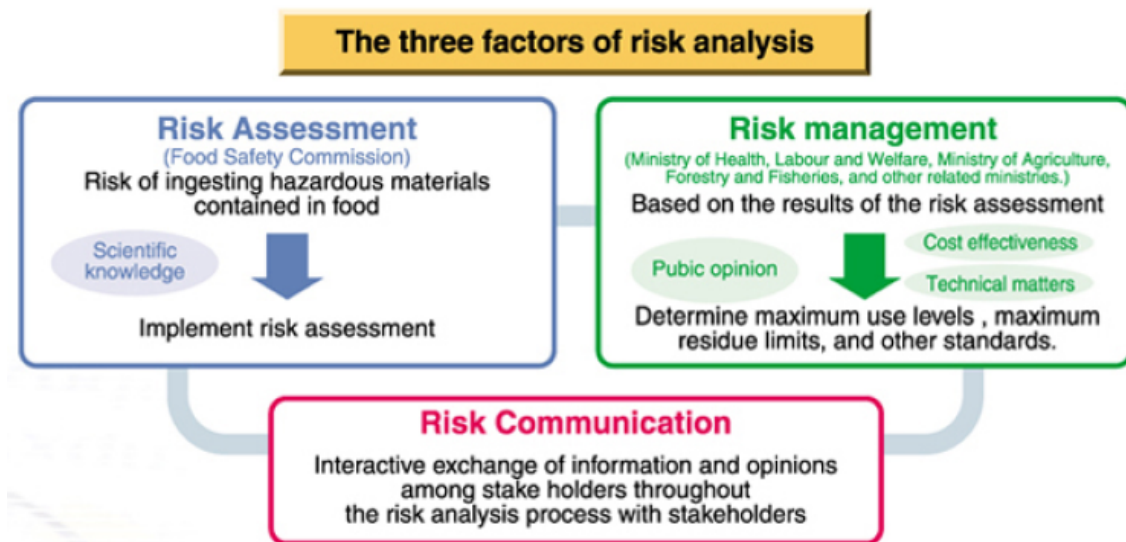
As mentioned above, policy that shifts Japanese consumer's incorrect perception of Chinese food products to correct direction is required. In other words, policy that shifts social construction of Chinese food products from negatively constructed to positively constructed group is required. Schneider et al. describe that the policy and media can be force to shift social construction of target population, describing media as "carriers of social constructions" which describe image of target populations and define their social constructions (Schneider et al., 1995: 343).

In food safety issue between China and Japan, it appears that media has deeply affected Japanese consumers' image toward Chinese vegetables. According to the survey conducted by the Japanese government, the most consumers obtain information relating to the food safety from the media such as newspaper, magazines, television, and radio (FSCJ, 2006: 10). Considering the fact, policy prescription to Japan should be the risk communication with general public, utilizing media representative which play an important role to tell messages from politicians to the public. Japanese government should take an effort to shift social construction of Chinese vegetables from socially negatively constructed "contenders" group to positively constructed "advantaged" group through providing correct information about safety of Chinese vegetables. It would contribute to establish effective food safety system in food trade between China and Japan.

Risk communication is recommended by the FAO and WHO as one of an element of risk analysis framework. Risk analysis framework is an effective framework to manage food safety, to maximize reduction of the food borne illness through science-based risk assessment, risk management, and risk communication (the FSC, 2008: 3 and Miyagawa, 2009: 2).

The Japanese government enacted the new Food Safety Basic Law (the Basic Law), which came into force in May 2003 as another regulatory reaction to a series of food related scandals, and adopted the Risk Analysis Framework. By the enactment of the New Basic Law, the Japanese government legal institutional framework to established effective food safety system as shown in the Figure 11. Japanese government should utilize the risk analysis framework toward effective risk communication, which provide correct information.

**Figure 11: Risk Analysis Framework in Japan**



Source: Food Safety Commission of Japan

### Policy Prescription to China

Chinese government is required to improve infamous reputation of its food products. To shift social construction of Chinese vegetables regarded by Japanese consumers from negative to positive, Chinese government also is required actions.

First, it is to improve its food safety system for domestic market. Since the entry of the WTO in 2001 and spinach safety issue with Japan, China has given priority to improve food

safety systems for vegetable exports to prevent trade disruption. After a series of rejections of its food products by trading partners, the Chinese government has recognized and expressed the significance of food safety in terms of people's health as well as potential economic and social impacts both in China and in its export markets (Chinese Government, 2010).

However, food safety problems are not limited to the export markets; but they are critical issue for the domestic market as well (World Bank, 2005: 2). Also, as seen in the Spinach safety issue which attribute to the news that reported unsafe vegetables distributed in China's domestic market, China's domestic condition of food safety affect Japanese consumers' perception of Chinese food. The Chinese government has proved its competence to establish effective food safety system in the past years in its export market. China should continue the ongoing effort to establish effective food safety system for the domestic market as well. Whether the consumers are in China or in Japan, they should expect high standards of quality and safety when it comes to food. Also, it will be great interest of China to recover from its infamous reputation.

Improving its overall food safety system will enable China to protect the export driven economic growth and a large multinational body of consumers as well as domestic consumers, and thereby lead to effective food safety system.

Secondly, as seen in the emerging issue, Chinese government should support small producers to vertically structured supply chain. When the Chinese government enacted new regulation that enhanced the food safety system through introducing "vertically structured supply chain"; Chinese producer was the target population. However, the Chinese central government failed to recognize that the producers can be further separated to the two target populations depending on their ability: large producers which are able to meet the requirement of the new

regulation, and small producers which are not. Throughout the implementation of the new regulations, Chinese small producers have been emerged as a new target population.

The Chinese government should consider the new policy which is design to positively impact the small producers. The policy can be the appropriate financial supports to allow small producers to equip facilities to be qualified as the producers for expanding foreign markets.

### **Lack of Appropriate Funding at Quarantine Authorities in Japan and China**

Finally, considering increasing volume of food trade between Japan and China, the allocation of enough personnel and fund in the quarantine stations both in China and Japan is recommended in order to make their new food safety system effective and sustainable.

As for Japan, there are 31 inspection centers including the Yokohama Imported Food Inspection and Quarantine Center, which has probably the best equipment and personnel in Japan (Law, p, 5). However, even in such facility, only 200 pesticides are able to be tested. The Japanese new “positive lists” include MRLs for about 800 agricultural chemicals and thousands of food/chemical combinations. The lack of sufficient human resources and equipment makes the progress of inspection and quarantine time-consuming. Toward the effective implementation of “positive list” to improve the food safety system, the Japanese governments are required to allocate sufficient human resources and equipment in their quarantine stations.

As for China, 35 branches of CIQ in province levels government and 282 branches in lower levels of governments work to quarantine, monitor, and supervise food products for export markets. Considering the large number of processing companies in China, 12,714 qualified to produce for export market, as well as higher demand in quality and volume of food exports,

allocation of additional resources is required to make newly established traceability system, “vertically structured supply chain” system sustainable (Gale, 2009: 20 and 21).

## **Conclusion**

The quantity of fresh and frozen vegetable trade between China and Japan will continue to grow in the future (UN, 2008: 7). Establishing food safety system will be more important issue to improve public health and to maintain consumer confidence to its food system as well as to provide sound regulatory foundation to international food trade, thereby develop mutually beneficial food trade relations.

This paper addressed the large research question “what is required to establish effective food safety system in food trade between Japan and China?” focusing on a case study of spinach safety issue. As for Japan, where public opinion is a pivotal factor that affects policy design of food safety regulation, giving people an appropriate perception of Chinese food products is the critical issue to be addressed. For China, where national pride as well as economic concern has been pivotal factors affecting policy planning of food safety regulation, ongoing effort to improve its overall food safety system is required.

In my analysis, Chinese bureaucrats are competent and quick to act to solve food safety system as seen in the establishment of traceability system and following regulatory response in the wake of spinach safety issue. Also, the governments, importing companies in Japan and exporting companies in China took the issue seriously and collaborated to solve the issue aiming the lift of import ban on spinach. Although spinach safety issue seems not to be solved, I think the issue gives both Japan and China opportunity to realize and fix the problems in their food safety system.

Japan and China should continue to have regular bilateral discussion in order to have technical exchange toward mutual understanding, thereby maintaining mutually-beneficial trade relations. In October 2009, the former Japanese Prime Minister Hatoyama Yukio and Chinese Premier Wen Jiabao met in Beijing and agreed to take a joint initiative to assure the food safety of imported food from China. In May 30 2010, both leaders signed a food safety agreement which allows both countries' officials conducting on-site inspections of food processing plants. With more cooperation on establishing effective food safety system, the stable environment can be established in the food trade of China and Japan.



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