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JAPANESE RICE IN THE
GLOBALIZATION OF THE FOOD SYSTEM

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Nobuhito Arakawa

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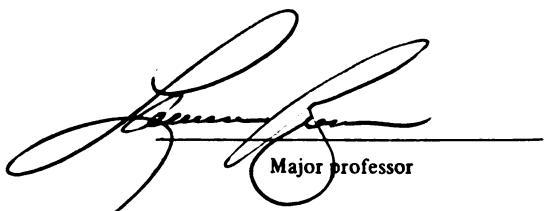

Major professor

Date July 14, 1995

JAPANESE RICE IN THE GLOBALIZATION OF THE FOOD SYSTEM

By

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A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF ARTS

Department of Sociology

1995

ABSTRACT

JAPANESE RICE IN THE GLOBALIZATION OF THE FOOD SYSTEM

By

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This study investigates social, cultural and environmental meanings of domestic rice to the Japanese and the political economic circumstances which opened the Japanese rice market. Related literature and statistics are examined.

The attachment of the Japanese to domestic rice comes from the long intercourse between them, especially from imperial rituals and nationalistic movements. Today, rice paddy is a principal component of the Japanese land, and prevents natural disasters.

Liberalization of the Japanese rice market was accomplished by US rice agriculture and the Japanese industrial sector, both of which sought further economic success by free trade. Although the Japanese Diet wanted ultimately to support liberalization, this was prevented by its skewed seat distribution toward agricultural and rural

areas.

Japan has to reconsider domestic rice for its environmental security. Also Japan has to reexamine its food security with a thorough understanding of the multidimensionality of the food system.

ACKNOWLEDGMENTS

I would like to express my gratitude to my advisor, Dr. Lawrence Busch. He inspired my interest and motivation in food systems which lead me to focus my thesis on the Japanese rice import issue in the global setting.

I also thank my committee members, Dr. Craig Harris and Dr. Rita Gallin for their effective suggestions and advice which helped me to shape the thesis.

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CHAPTER I

INTRODUCTION

Since the end of World War II, the Japanese food system has been changing drastically. The Japanese dietary pattern has been greatly westernized, and they have come to import more than half of their food in accordance with their declining food production. However, in spite of the changes in the Japanese food system, rice seems to have defended its status as a staple. In this introduction, we will first examine how the significance of rice changed in the Japanese diet, and how rice has been treated in the series of liberalizations of the Japanese agricultural market. Questions for this thesis will be presented accordingly.

1.1 Rice in the Postwar Japanese Diet

Japan has experienced a phenomenal diversification and enrichment of the diet since the end of WW II. Today, most Japanese can afford not only luxurious traditional Japanese meals which used to be too expensive for the middle class, but also all kinds of foreign dishes such as Chinese, French, Thai, Indian, and many other possible meals including American fast foods. In this diversification, the Japanese

have come to favor European and American foods, and their dietary patterns have been greatly westernized. This trend is shown in Table 1.1 which is sorted according to the 1992 data. Since 1960, calorie intake from protein-rich sources such as meat, eggs, and dairy products has increased rapidly. Surprisingly meat consumption has increased 6.8 times. Fruits, which used to be luxurious deserts, are now also eaten twice as much as in 1960. Consumption of tubers, which were an important substitute food during WW II but have been regarded as poor foods recently, has decreased 0.6 times. Lipids, which are rarely used in traditional Japanese dishes, have increased 3.4 times, this increase implying that Japanese now eat more fatty foods. In this way, the Japanese dinner table has become westernized and is now rich enough that people often face the problem of overeating and related illness.

Through the enrichment and westernization of the Japanese dietary pattern, the significance of rice as a staple seems to have been decreasing. This trend is also shown in Table 1.1. In 1960 almost half of the daily calorie intake was from rice. In the last thirty-two years, however, rice consumption has decreased by as much as 38%. Among those items which weighed more than 5% of total energy intake in 1992, only rice showed a consumption decline. Because the ideal calorie intake for the Japanese is believed to be 2100 calories (Yasuda, 1994:101), if this trend holds, it can be said that the Japanese will soon be

Table 1.1: Change in Source of Energy in the Japanese Diet (in kilocalories)

	1960	1965	1970	1975	1980	1985	1990	1992	Weight in 1992(%)	Consumption Change Ratio from 1960 to 1992
Rice	1105.5	1089.7	927.6	856.5	770.0	727.3	683.0	680.3	25.9	0.62
Lipids	105.0	159.0	227.1	274.5	319.5	353.8	359.8	360.6	13.7	3.43
Wheat	250.5	292.3	310.3	316.8	325.0	319.7	319.9	318.9	12.1	1.27
Sugar	157.2	196.3	282.6	262.4	244.8	227.2	220.4	212.7	8.1	1.35
Meat	27.5	52.3	80.5	108.4	138.3	154.9	180.2	186.7	7.1	6.79
Dairy	36.0	61.7	82.3	87.9	107.4	116.1	143.6	144.2	5.5	4.01
Fish	86.8	98.5	102.0	119.3	133.4	135.7	133.4	126.5	4.8	1.46
Pulses	104.4	106.0	115.2	107.3	97.4	104.5	107.0	113.1	4.3	1.08
Vegetables	84.3	74.0	77.7	76.7	79.3	80.4	80.8	80.2	3.1	0.95
Eggs	26.9	50.1	64.4	60.7	63.5	66.0	73.1	78.6	3.0	2.92
Fruits	28.9	39.1	53.2	57.7	53.6	52.9	56.0	58.4	2.2	2.02
Tubers	81.6	54.2	39.2	39.0	41.3	45.3	49.8	49.4	1.9	0.61
Others	196.0	185.6	166.9	149.8	188.0	208.2	226.8	216.0	8.2	0.52
Total	2290.6	2458.8	2529.0	2517.0	2561.5	2592.0	2633.8	2625.6	100.0	

Source: Based on data from Yasuda (1994:102-103).

able to live without rice in caloric terms.

Despite the decline in the dietary significance of rice which has accompanied westernization, rice is still the staple for the Japanese according to mentality and taste. For example, a survey by the Ministry of the Prime Minister in 1989 shows that 95.4% of the respondents answered that rice is the ideal Japanese staple. This number was about 8% higher than in a survey 10 years earlier (Soda, 1989:35; Masaki, 1994:52). Additionally, the menu of school lunches in the past four decades has been shifting toward rice and away from bread. The school lunch program was originally started in 1954 to alleviate nutritional problems among school children by providing bread and powdered milk supplied by the United States. At that time, because Japan still faced a food shortage in its reconstruction from the ashes of WW II, this program was welcomed and bread and powdered milk drove the westernization of the Japanese diet. However, the menu of the school lunch has gradually changed, and white steamed rice is becoming increasingly popular among children. A survey in 1990 shows that steamed rice is served 2.5 times a week in 98% of elementary and junior high schools, and 90% of children prefer a rice based to a bread menu (Masaki, 1993:52).

If we return to Table 1.1, we see that the consumption of wheat has increased only 1.27 times since 1960, and this increase does not offset the decrease in rice consumption. This means that in the trend toward westernization of the

Japanese diet, wheat --the staple western food-- has not become the Japanese staple. Rice is still the staple in the Japanese diet.

1.2 Japanese Rice in the Liberalization of the Japanese Agricultural Market

After the early 1960s, as Japan recovered from the devastation of WW II, it began to liberalize its agricultural market in order to return to the international

Table 1.2: Liberalization of Major Agricultural Commodities

Year	Number of import restricted items	Items
1961	103	Fresh vegetables, Soybean
1962	81	Raw silk
1963	76	Bananas, Raw sugar, Coffee, Honey
1964	72	Lemons, Grain sorghum
1970		Margarine, Shortening
1971	28	Grapes, Apples, Grapefruit, Frozen pineapple, Rapeseed, Hogs, Pork, Chocolate
1972	24	Refined sugar, Cattle feed
1974	22	Malt
1975-90	22	Reduction of tariffs on agricultural commodities
1991	13	Beef, Oranges

Sources: Soda (1989:62); Tashiro (1987;19); Toda (1986:147); Yasuda(1993:28).

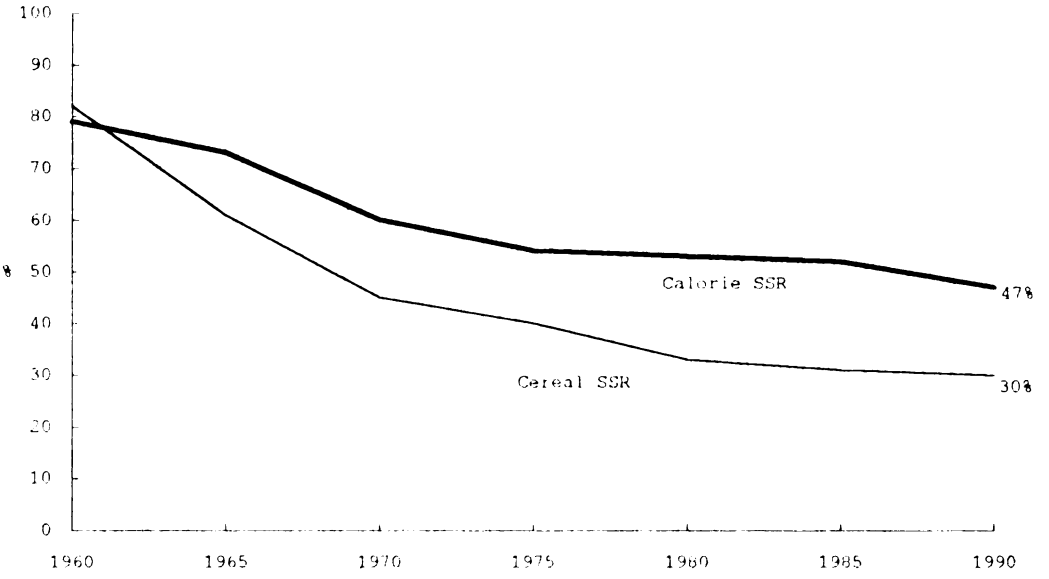
economy. The series of agricultural liberalizations continued until the mid 1970s. Table 1.2 shows major liberalized agricultural items sequentially. Important agricultural items such as soybean and grain sorghum were

liberalized in the 1960s. Through this liberalization, agricultural items with import restrictions shrank to 13 in 1991 from 103 in 1961.

Initially, the opening of the agricultural market was aimed at promoting export of agricultural commodities. At that time, Japan was still an agricultural country, and it sought to expand its agricultural exports by the mutual liberalization of agricultural trade with foreign countries. However, as Japanese economic power rapidly grew, this liberalization caused heavy dependency on food imports, and the self sufficiency rate (SSR) for food products has been decreasing. Figure 1.1 and Figure 1.2 show this trend. Figure 1.1 shows the decline of two indices which represent the overall SSR. The first index, calorie SSR, reveals that Japan cannot supply more than half of its food calorie requirement by itself. The second index, cereal SSR, was actually as low as 29% in 1991 (from the same source as Figure 1.1). This 29% is extremely low among developed countries; in 1988, cereal SSR in Denmark, West Germany, Italy, England were 136%, 106%, 80%, 105%, respectively (from the same source as Figure 1.1). Figure 1.2 shows the SSR of major agricultural commodities in Japan. The SSR of wheat and pulses has been very low although soybean is the traditional ingredient of Japanese soy sauce, soy bean paste, and tofu.

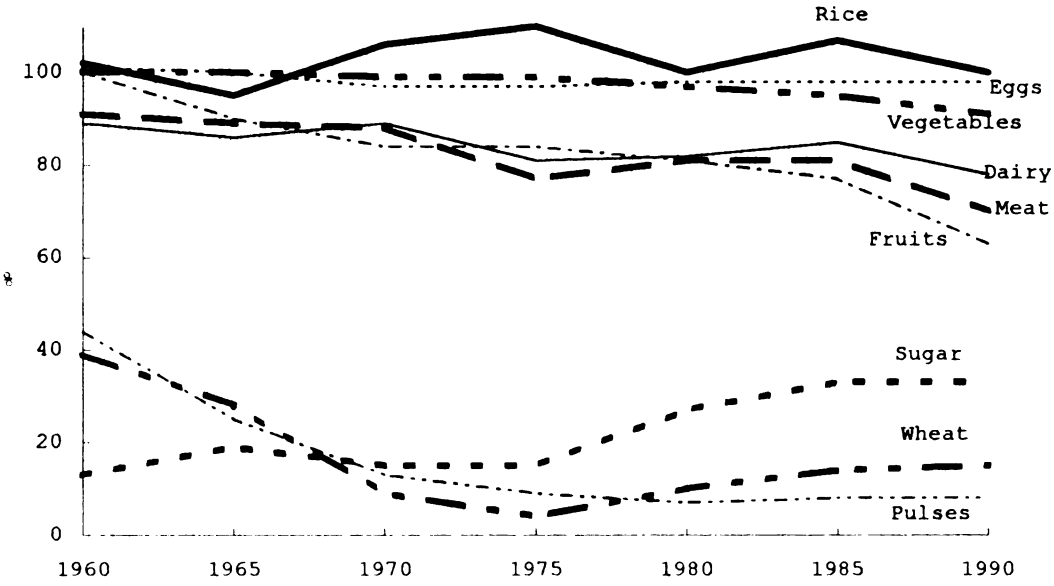
In spite of the Japan's heavy dependency on food imports and its low SSR, Japanese rice has been

Figure 1.1: Change in Principal Self Sufficiency Indices in Japan



Source: Based on the data from Norinsuisansho (Ministry of Agriculture, Forestry and Fisheries, Japan), Nogyo-hakusho (Tokyo: Norin-tokei-kyokai, 1990 and 1992).

Figure 1.2: Japanese Self Sufficiency Rate by Commodity



Source: Based on data from the Ministry of Agriculture, Forestry and Fisheries, Japan ed., Abstract of Statistics on Agriculture Forestry and Fisheries (Tokyo: Association of Agriculture and Forestry Statistics, 1978 and 1993).

exceptionally protected from foreign markets by government policy, and the SSR of rice has been 100%[1]. This policy, originated as the Rice Law in 1921, is based on the philosophy that a principal food item should be supplied domestically for security reasons, and related policies such as the price support program and maintenance of buffer stocks have also helped provide a stable supply of rice. Because of these rice policies, Japan managed to overcome the food shortage during and after WW II.

In 1986, however, the United States suggested liberalization of the Japanese rice market, and this issue became the center of hot debate among Japanese. Most opinion polls showed more people were against rice imports than for it[2]. Without question, agricultural organizations showed strong opposition to liberalization. For example, the National Central Association of the Agricultural Cooperatives (Zenchu) began a campaign to obtain thirty million signatures to prevent further liberalization of agricultural markets, especially the rice market[3]. In the

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[1]Before rice production could meet the demand in the mid-1960s, Japan actually imported rice (Soda, 1989:124; Tashiro, 1987:27). However, this import was to supplement domestic rice production, and was not intended to liberalize rice market.

[2]For example, an opinion poll by Yomiuri-Shinbun, one of the three major Japanese newspaper, shows that 53.4% responded against the liberalization whereas 37.4% agreed with it (Soda, 1989:135). For more examples, see Ohnuki (1993:25-26).

[3]Asahi shimbun, August 5, 1987: 9.

campaign slogan, the association claimed that agricultural markets such as rice market should not be opened any more in order to prevent environmental degradation and to secure a safe domestic food supply. It also claimed Japan should not lower its SSR further. Surprisingly, in December 1993, despite the atmosphere against rice imports among Japanese at large, the government decided at the GATT meeting to partially open the rice market. Many Japanese still have questions and strong resentment related to this decision.

1.3 Questions and the Construction of the Thesis

The above discussion about Japanese rice leads to two questions worth researching. First, why do the Japanese stick to the idea that rice should be supplied domestically? It seems that rice has some significant social, cultural and environmental meanings to the Japanese besides its obvious place as their staple food. Second, why did Japan decide to liberalize the rice market in spite of strong domestic opposition?

These two questions will provide the basis for discussion in this thesis. The next chapter investigates the social and cultural meanings of domestic rice to the Japanese. The third chapter explores the environmental significance of domestic rice in Japan. In the fourth

chapter, the current situation of Japanese rice economy is examined. The fifth chapter discusses the political economic dynamics which brought about liberalization of the Japanese rice market. Finally, in chapter six, all discussions in the thesis are combined to determine their implication.

CHAPTER II

SOCIAL AND CULTURAL SIGNIFICANCE OF RICE TO THE JAPANESE

2.1 Historical Examination

Relationship between Rice and the Emperor

In Japan rice has been regarded as sacred, and treated as a different grain from others. Historically, this sacredness of rice derives from its relationship with the Japanese emperor. In ancient Japan, the emperor was regarded as a shaman as well as a political leader, and the emperor's most important role was to solicit and to give thanks for a good harvest of rice to the supernatural powers (Ohnuki, 1993:45). These ritual events still exist as Niiname-sai, Kanname-sai, and Daijyo-sai, first two of which are conducted every year by the emperor, and the last of which is held only after an emperor dies. According to the Nihonshoki, which is the oldest Japanese document(written in the 8th century), Niiname-sai originated during the rein of the legendary first emperor Jimmu in the 7th century BC and was established by the 22nd emperor Seinei in the 5th century (Ohnuki, 1993:46). Rice used in those ceremonies has been grown in two paddies close to Kyoto, the old Japanese capital, with special care. In the ceremonies, an emperor

gives thanks for a good harvest to the supernatural powers, and returns the soul of the rice to them, asking them for next year's good harvest. This spiritual exchange between the emperor and supernatural powers via rice is believed to be the foundation of rice as currency later (Ohnuki, 1993:67).

In parallel with this importance of rice in imperial traditional rituals, the sacredness of rice is seen in Shintoism, the Japanese indigenous religion which maintains that the emperor is the descendent of the god which created Japan. In Shintoism, some natural things and phenomena are believed to possess deities, and the deity of food is believed to reside in rice (Ohnuki, 1993:51). Because this deity of food represented purity and the spirit of growth, it was believed that rice consumption could remove impurities and provide people with more spirit (Ohnuki, 1993:55).

In this way, Japanese tradition has believed that a good rice harvest is brought by the emperor's power, and that the deity of rice purifies and revitalizes people. In other words, purification and revitalization of the Japanese are achieved by eating rice the good harvest of which is brought by the emperor's power. Because of this relationship between the Japanese people and the emperor via rice, foreign rice is different from the domestic rice, and is accepted only with difficulty in Japan.

The Economic and Social Role of Rice in Japan

In economic terms, until metal currency was introduced from China in the 13th century (Ohnuki 1993:69), rice was the principal currency due to the influence from the belief that the emperor and super natural powers exchange their spirits via rice as mentioned above. Even after 13th century, rice was often used as currency. In particular, the land tax was paid with rice until the end of Japanese feudalism in the mid 19th century for several reasons. First, because peasants usually did not have a way to earn monetary currency, they could not pay the land tax with it (Ohnuki, 1993:69). Second, because the Japanese feudal governments experienced and were afraid of corruption in the governments caused by monetary currency, rice was preferred (Ohnuki 1993:71). Since each clan's power was measured by yield of rice during that time, each clan made efforts to increase it.

Rice as a Political Tool

Because of the sacredness of rice and the importance of rice as a tax, during the period of the Tokugawa feudal government (1603 - 1868 AD), peasants were classified in the second highest class in the castes established by the government. These castes classified people into samurai, peasants, craftsman, and merchants from highest to lowest. During this era, the Japanese agrarian ideology, which esteemed the peasant's hard farm work as the virtue of the Japanese nation, was advocated by some nativist scholars who

lamented the loss of Japanese identity as a result of influences by China and Korea and sought the traditional Japanese way (Ohnuki 1993:87). Since this agrarian ideology was ideal for stabilization of the society, it was supported by the feudal government. This agrarian ideology facilitated the sacredness of rice. Even today, it is sometimes said that one must not leave a single rice grain in the rice bowl because it is produced by farmers' pure and admirable hard work. For the Japanese, rice is still believed to be holy.

After the Tokugawa feudal government, the new Japanese imperial government (1868-1945) made an effort to industrialize so as to catch up with the European countries. During this period, Japanese agrarian ideology and the sacredness of rice were mobilized to raise and consolidate the spirits of the Japanese people. Under the imperial constitution, the emperor was a living god who succeeded the authority of the god who created Japan, and Japanese people were taught to be an imperial nation, that was absolutely superior to others. As part of this imperialism, peasants' hard work and the agrarian ideology were transformed into a national virtue in all industrial sectors. By virtue of this, rice was treated as a sacred crop provided by the holy efforts of peasants. The sacredness of rice was especially emphasized during the second world war. The Japanese were taught that domestic rice represented the purity of the Japanese self, and gave sacred energy to soldiers.

Through this historical intercourse between the

Japanese and rice, the Japanese at large had an unconscious belief that domestic rice was preferable to imported rice. Due to this feeling, to the Japanese, rice importation urged by the international environment was seen as threatening the loss of one important aspect of Japanese identity.

2.2 Rice Farming and Japanese Behavioral Patterns

The Japanese are often described as precise and punctual. It is also said that the Japanese prefer collective action more than Europeans and Americans. Among the Japanese it is believed that the origin of these tendencies is rice farming.

First, the Japanese feel that their preciseness and punctuality derives from the fact that rice farming requires a detailed and exact schedule of farm labor which extends from planting seedlings to harvest. This is because the growing season for rice --originally grown in tropical Asia-- is limited in Japan (Sekiya 1993:23). In addition, because the amount of water required for rice cultivation is different in each farming stage[1], people need to be watchful of water management. These elaborations required for rice

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[1]For example, the seedling planting period requires the largest amount of water. Paddy water should be shallower in early summer. Water should be drained for a week in summer. The succeeding reproductive growth again needs a large amount of water. In addition, as discussed in chapter 3, careful water control is required to avoid freezes in northeast Japan.

farming are believed to be the origin of Japanese preciseness and punctuality (Tsukuba, 1984:120).

Second, because ample water is essential for the Japanese style of rice farming, people had to construct and maintain canals, main and subsidiary irrigation channels, and paddy dikes collectively. Furthermore, during the Tokugawa feudal era, a community was the unit of land taxation, and assignment of the land tax within a community was decided by community members themselves (Sekiya, 1993:22). Thus, the idea of fair shares and communal harmony had priority over private matters. Egotistical behavior meant suspension of an individual's plot or a purge from the community. This historical background of rice farming is a reason for the Japanese preference for collective over independent actions (Tsukuba 1984:122).

CHAPTER III

RICE FARMING IN JAPAN AND ITS RELATIONSHIP WITH THE ENVIRONMENT AND SOCIETY

Agricultural production and the natural environment are deeply related to each other. The environment is altered by the mode of agriculture, and the mode of agriculture is influenced by the environment. In the case of Japan, agricultural production and the environment have been in harmony for centuries. In particular, the mode of rice production has lasted for more than two thousand years without serious environmental problems. Japanese rice agriculture can be classified as highly sustainable agriculture. In this chapter, we will examine how rice farming was adopted and developed in Japan. Because the key factor in the sustainability of rice production is the rice paddy, we will pay special attention to the rice paddy and its environmental significance.

3.1 Introduction and Dissemination of Rice in Japan

Rice has two original species: one in tropical Asia (*Oryza sativa*) and the other in West Africa (*Oryza glaberrima*) (Berker et al., 1985:14). The former is

currently grown worldwide, while cultivation of the latter is limited to West Africa. Oryza sativa, usually called Asian rice, has three subspecies due to the diverse environmental factors: japonica, indica, and javanica. Japonica has a short and round grain and is sticky after cooking, whereas indica has long to medium grain and is flaky after cooking. Javanica has a large and bold grain and its texture is medium sticky (Barker et al., 1985:16). Among these varieties, indica rice occupies a major portion of the world rice market. Trade of japonica is much smaller than that of indica rice (Berker et al., 1985:190). Japonica rice is grown and consumed in Japan, Korea, Taiwan and north China. Indica rice is seen in India, Burma, Thailand, and south China (Hoshi, 1993:86).

Rice is believed to have been introduced to Japan through Kyushu island from the Yangze River Delta in China about the 4th century B.C. or before (Hoshi, 1993:87-89; Soda, 1993:163). Since rice is originally a tropical plant, its dissemination in Japan, which belongs to temperate and semi-boreal zones, took a considerable amount of time. This dissemination of rice throughout Japan was achieved by breeding to make varieties resistant to cool weather as well as farmers' efforts to create water management skills for maintenance of adequate temperature.

Before the Meiji imperial era (1868-1912), this effort of rice breeding was made by private farmers and peasants. Their method was to find mutants tolerant to coolness by

chance which was found in bad harvest in cool weather (Hoshi, 1993:89). Because of this primitive breeding, it is said that it took five hundred years for the front line of rice cultivation to reach the northernmost part of Honshu island. Rice agriculture in Hokkaido was achieved by breeding at agricultural experimental stations in the early Meiji imperial era (Hoshi, 1993:90). Even after that, efforts to improve cold-tolerant rice varieties were continued. It was not until the end of WW II that a stable harvest in northeast Japan was achieved. Currently, thanks to efforts by farmers and researchers, northeast Japan has become the most famous place for good tasting rice.

In addition to these breeding efforts, farmers have developed water management skills to maintain the proper temperature of the rice paddy. For example, in Fukushima prefecture in northeast Japan, there is an old anthology written in the 17th century that suggests tips for peasants for good rice farming (Tsukuba, 1984:121). This anthology consists of about 1700 short Japanese traditional style poems, and some of them are about how to avoid cold damage. The followings are some suggestions in these poems: direct use of mountain creek water is too cold for the rice plant; in mountain regions, water should be introduced into a paddy in the late afternoon after the creek water gets warm; water should be kept deeper at night so that the warmth of the water avoids cold. Even today, the ideas of these poems can be observed in rice farming in northeast Japan. Farmers

often put a low separate wall along the paddy dike and circulate irrigation water before it gets into the rice paddy so that it gets warm enough. In modern irrigation dams, the height of the water intake is adjustable so that warm surface water can be used.

3.2 Development of Rice Paddies

World rice farming is classified by cultural type: lowland, upland and deep water. The lowland culture is the most common in Asia. In lowland or wetland culture, a farm is inundated, leveled and enclosed by a dike (Berker et al., 1985:14-15). This farm is called a rice paddy. Japanese rice agriculture belongs to this wetland cultural type.

One of the characteristics of Japanese wetland rice culture is the large investment in land development for rice paddies and related civil construction in its history. Here, we will examine land development for rice paddies in Japanese history after the late 16th century when the Japanese civil war ended.

As discussed in chapter II, the land tax was collected in the form of rice even after the introduction of metal currency in the 13th century, and a clan's power was measured by the amount of rice yield. Because of this, each clan attempted to expand its area of paddy lands by several means when peace came after the civil war in the late 16th century. For example, some coastal clans developed lands by

reclamation of shallow seas by building earth or stone dikes and draining water. Figure 3.1 is the case of Yatsushiro Gulf in Kumamoto Prefecture in Kyushu. The reclamation was started by the Kato Clan in late 16th century, and it was succeeded by the Hosokawa Clan[1] in the Tokugawa feudal era beginning in 1603. The area reclaimed by these two clans was 4103 hectares (Furushima, 1967:170). During this period, additional reclamation areas of 3051 hectares were created by communities and merchants (Furushima, 1967:170)[2]. Since construction was usually carried out by manual labor power, we can imagine how difficult it was to carry out such reclamation.

Creation of paddy lands further required technical and social management such that water could be stored in each plot. Dikes were made around a plot, the paddy surface was leveled, and ditches were arranged with a thorough consideration of contour. Even river dikes were built to protect rice paddies and people's lives from flooding. Clans and peasants also needed to create a water management organization to distribute water to each plot, and to make

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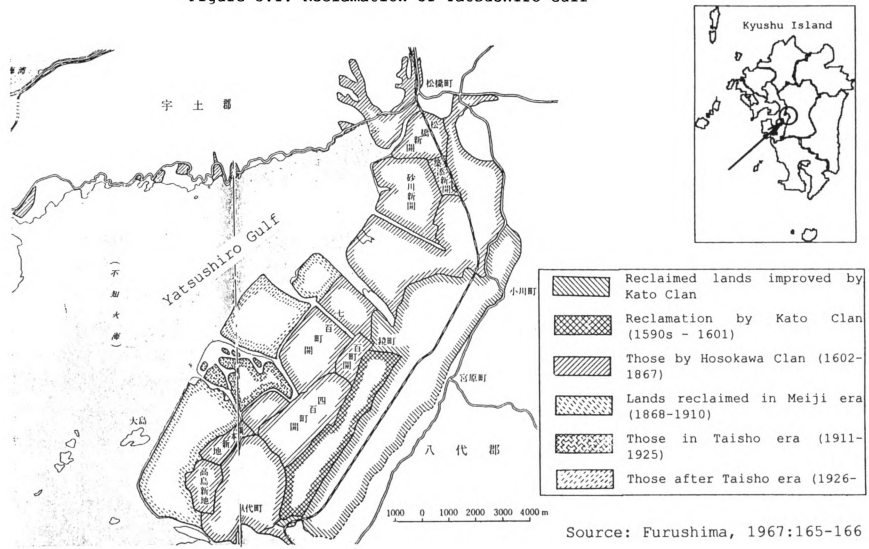
[1]It is ironic that rice market was partially liberalized by Prime Minister Hosokawa who is a descendant of this clan lord.

[2]Examples of this type of reclamation are countless. An old map kept in a shrine in Aichi Prefecture shows that most parts of Nagoya city, the birth place of this author, were created after the 16th century for rice paddies (Furushima, 1967:162).

Figure 3.1: Reclamation of Yatsushiro Gulf



Source: Furushima, 1967:165-166

rules for mutual help in the case of floods. Because such additional elaboration is usually not required for upland farming, development of rice paddy was more demanding than development of upland farms.

Through these collective efforts, the area of rice paddy increased from 2 million hectares in the beginning of the 17th century to 4.3 million hectares in the late feudal era[3] (Yamazaki, 1984:59). According to the Japanese government, 70% of irrigation facilities currently used were built in this period (Nagata, 1984:75).

Development of land went on even after the feudal era. In mountain regions, modern dams were built to secure irrigation water. In flood plain regions, huge drainage pumps were equipped to control floods and the underground water level[4].

Besides these collective struggles to expand paddy lands, each peasant also accumulated tiny efforts on their own land. A great example is the Senmaida (a direct translation would be thousands of terrace paddies), which covers steep coastal slopes in Ishikawa Prefecture. Senmaida

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[3]Further research is needed to see how total rice paddy area has decreased to 2.8 hectares in 1990s (See table 3-1).

[4]Drainage pumps in some flood plain regions have the capacity to drain as much as 4200 hectares of rice paddy areas. (Japanese National Committee of the International Commission on Irrigation and Drainage, Water User's Associations in Japan Initiated and Participated by Farmers, about 1990(year unknown):17)

has a magnificent view. It covers whole slopes of 60 to 100 meters high with irregularly shaped rice paddies. Furushima (1967:139) called Senmaida the Japanese Pyramid although it was not created by a central power. Because it was created by generations of peasants, there are few archives about it.

3.3 The Sustainability of Rice Paddies

Because of the water kept on their surfaces, rice paddies have many unique characteristics which upland farms do not have. These characteristics will be examined here.

First, rice paddies have several advantages due to the surface irrigation water such as a natural supply of nutrition, a damping effect against change of air temperature, fast decomposition of pesticides, and capability of continuous rice cultivation (Yahata, 1984:42-46). In terms of nutrition supply, not only does irrigation water bring nutrients to rice plants naturally but also some algae in the surface water fix and supply nitrogen in the air to the paddy soil. Since the surface water allows little oxygen to go into the ground, paddy soils tend to be less oxidized than upland soils, and phosphorus takes some different forms which are easily absorbed by plants. In Japan, it is well known that Adam Smith said in The Wealth of Nations that rice was more productive than wheat grown in the most fertile land (Mochida, 1993:205; Nagata, 1984:73; Sugawara, 1984:7). Surface water also protects rice plants

from sudden changes of air temperature thanks to its large heat capacity. In northeast Japan, farmers often keep surface water deep when low temperatures or freezes are expected. Pesticides are quickly decomposed in the revivified soil in the rice paddy. It is said that 90% of pesticides applied are decomposed in a few months (Yahata 1984:46). Furthermore, because irrigation water also washes out some undesirable residuals of the rice plants from the rice paddy, rice can be cultivated continuously without soil depletion. Finally, surface water alleviates the arduous work of weeding to a great extent. In this way, the surface water makes rice farming a more sustainable form of agriculture.

However, rice paddies have some disadvantages compared to upland farms. First, since rice paddies are aimed only at rice production, it is difficult to grow other crops. Second, due to the muddy ground, arduous farm work is required. The ground of some rice paddy is sometimes too soft to use agricultural machines. Third, the ground of rice paddies must be even and horizontal to keep water. In the case of Japan, +/- five centimeters is the standard for rice paddy which has been improved by the paddy reform projects conducted by the Ministry of Agriculture, Forestry and Fisheries. Fourth, a substantial amount of water is needed compared to upland farms. Finally, as discussed earlier, a larger investment is required for irrigation systems as well as for making rice paddy itself although the productivity of

the rice paddy is quite stable once it is constructed[5].

There is one more critical thing to mention about rice paddies. Although rice paddies are a very sustainable form of farm, once rice paddies are abandoned for a few years, it is difficult to recover their productivity. There are three main reasons for this. First, due to its fertile soil, weeds flourish; in an extreme case the paddy may change to woods in several years. Second, the surface water can no longer be kept because dikes and the Sukidoko layer, the compacted soil layer to keep water, gets cracks if the surface water is not stored for a long time. Third, if a rice paddy is dried, the ground surface usually becomes irregular, and it is difficult to make the surface even again. These phenomena were often observed soon after the rice production adjustment policy started in 1974 (Sekiya, 1993:79).

3.4 Rice Paddy and the Environment

Rice paddies are one of the major components of the Japanese national land. Table 3.1 clearly shows this. It reveals that rice paddies occupy 22% of the national area if we do not count forests. It can be also understood, with simple calculation, that 54% of total farm land is rice paddy.

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[5] There is a report that coefficient of relative variation of the yield of paddy rice is much smaller than wheat's (Yahata 1984:52).

Table 3.1: Pattern of land usage in Japan (1990)

	Area (million ha)	% including forest	% excluding forest
Forest	25.1	66	- - -
Non-Paddy Farm	2.4	6	19
Rice Paddy	2.8	7	22
Non-farm areas	7.5	20	59
Total national land	37.8	100	100

Source: Ministry of Agriculture, Forestry and Fisheries, Japan ed., Abstract of Statistics on Agriculture Forestry and Fisheries (Tokyo: Association of Agriculture and Forestry Statistics, 1993).

Because rice paddies occupy the Japanese land to such a great extent, there are several environmental meanings to rice paddy besides rice production.

First, rice paddies form a buffer reservoir to prevent flooding in the case of heavy rain and storms (Nagata, 78:1984; Ouchi, 1990:61; Sekiya, 1993:35-58; Sugawara, 1984:14; Yahata, 50:1984). It is said that the total capacity of rice paddies as a buffer reservoir in the rice cultivation season is about 3.5 billion tons excluding rice paddies in the flood plain region, and 5.1 billion tons if all rice paddies are included (Sekiya 1993:33-34). This capacity is a few times larger than the aggregate capacity of artificial dams in Japan[6]. If this estimation is correct, more severe floods can be anticipated if Japan loses more rice paddies. In fact, Sekiya (1993:40) explains that the

[6]Calculated from data in Inoue(1993:305-306).

Kanda River in Tokyo has come to suffer flooding more often due to the disappearance of rice paddies in the watershed. Furthermore, Ichikawa city in Chiba prefecture, which is a bedroom town of Tokyo, has started a new project in 1985 in which the city provides a subsidy to farmers to conserve rice paddies in order to protect their flood control function (Sekiya 1993:41). This project has been launched because the city experienced more and more serious flooding as rice paddies disappeared due to urbanization[7]. Nagata (1984:78) computed that this buffer reservoir effect of rice paddies is equivalent in value to 6 trillion yen of an artificial dam.

Second, rice paddies have the function of supplying water to the underground aquifer. Maintenance of the underground aquifer is an important issue in Japanese delta areas which experienced severe subsidence due to overextraction of underground water for industrial and civil use in the 1970s[8]. In the 1970s, because of ground subsidence some buildings have tilted or have been submerged

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[7]The city had 1330 hectares of rice paddies in 1955, which was reduced to 400 hectares in the late 1980s (Sekiya 1993:41).

[8]For example, Kanagawa prefecture, which is adjacent to Tokyo, suffered a record annual subsidence of 26 centimeters (Sekiya 1993:43). Furthermore, in urban areas of Japan, there is a problem that little precipitation reaches underground aquifers because of the concrete and asphalt which covers most parts of urban areas. Recently, permeable concrete and asphalt has begun to be used in many urban areas to solve this problem.

and higher seawalls have had to be built in some delta areas. Although ground subsidence of these deltas has currently ceased because of reduction in underground water exploitation, the balance of supply and extraction should be kept even to prevent further subsidence. Here, rice paddies play an important role in supplying as much as 22 billion tons of water annually (Sekiya, 1933:45). Because it is said that the annual balance of underground water is still minus two billion tons (Sugawara 1984:14), conservation of rice paddies is critical in this respect.

Third, rice paddies prevent soil erosion by surface water (Sekiya 45:1993; Yahata 1984:50). Because rice paddies occupy a substantial amount of Japanese land (Table 3.1), this erosion prevention capacity cannot be disregarded. This capacity is especially important in hilly regions where terraced rice paddies are developed.

The final point about the environmental effects of rice paddies is the purification of water (Yahata, 1984:51). Water quality measurements such as suspended substances, chemical oxygen demand, and biochemical oxygen demand are especially improved by rice paddy. Also inorganic forms of nitrogen in water such as NH_4^+ and NO_3^- are decomposed by paddy soil (Sekiya, 49:1993). This effect compensates for water pollution caused by fertilizers applied to vegetables and orchards. This purification capacity is important for Japan, where the population density is as much as ten times higher than the United States and water pollution is a

serious problem of swamps and lakes.

CHAPTER IV

RICE ECONOMY IN CONTEMPORARY JAPAN

The investigation in the previous chapters showed that domestic rice has unique social, cultural and environmental meanings to the Japanese. However, the Japanese rice economy is now in transition as the result of rapid economic development. Since understanding of this transition is essential for the next chapter, we will briefly examine it here.

4.1 The Place of Rice Farming in Japanese Economy

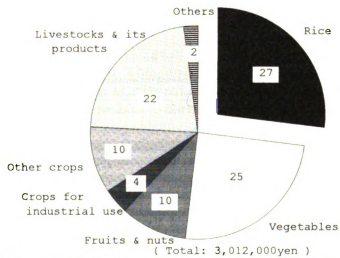
From 1960 to 1990, the Gross Domestic Product of Japanese agriculture has increased by as much as 5 times. However, because Japanese total GDP has increased by 26 times in the same period due to rapid industrial development, the contribution of agriculture to the total GDP has been declining. In 1990, agriculture represented merely 1.8% of the total GDP while it was 9.0% in 1960. In terms of labor force, the contribution of agriculture declined from 26.8% to 6.2% of the total labor force from 1960 to 1990.

Table 4.1: The Contribution of Agriculture to the National Economy

Year	GDP (in current billion yen) Total	Agriculture (rate in total)	Labor Force (in thousand) Total	Agriculture (rate in total)
1960	16,681	1,493 (9.0%)	44,650	11,960 (26.8%)
1970	75,299	3,131 (4.2)	51,090	8,110 (15.9)
1980	245,547	6,007 (2.4)	55,520	5,060 (9.1)
1990	434,154	7,896 (1.8)	62,800	3,920 (6.2)

Source: Nourin-toukei-kyokai, Nougyou-hakusho-fuzoku-toukeihyo (1993:10-11).

Figure 4.1: Agricultural Gross Income per Farm Household (1991)



Source: MAFF, Abstract of Statistics on Agriculture, Forestry and Fisheries, 1993.

In this relative decline of Japanese agriculture in the national economy, rice farming and rice farmers have been greatly affected. As we have discussed in chapter III, rice paddy occupies 54% of all cultivated land. In terms of the

farming population, 2.6 million farm households out of 3.8 million produced rice in 1990[1]. In terms of gross agricultural income in farm households, on the average, 27% came from rice in 1991 (Figure 4.1).

4.2 A Comparison of Rice Farming and Rice Price in Japan and the United States

Table 4.2: Size Distribution of Rice Farms in Japan (1990)

Number of	Distribution of Farm Size (%)					
Rice Farms	< 0.5ha	0.5-1	1-2	2-3	3-5	5+ ha
2,574,000	51.6	28.7	14.3	3.3	1.6	0.6

Source: MAFF, Poketto-nourinsuisan-toukei, 1994:164.

Table 4.3: Size Distribution of Rice Farms in the USA (1992)

Number of	Distribution of Farm Size (%)					
Rice Farms	<6 ha	6-20	20-101	101-404	404-1214	1214+ ha
11,212	2.0	8.8	46.2	40.4	2.5	0.1

Source: Organized from US Department of Commerce, 1992 Census of agriculture, vol. 1, part 51, 1992:37.
Note: Size distribution range is irregular because original data are in acre.

The scale of Japanese rice farming is very small compared to that of the United States. Tables 4.2 and 4.3 show the distribution of rice farm size in Japan and the United States. In Japan, almost all farmers fall in the 0-5 hectare range and their average was 0.75 hectares in 1990

[1]MAFF, Poketto-norinsuisan-toukei, 1994:16, 164.

(computed from the same source as Table 4.2). On the other hand, average rice farm size of the United States was 124 hectares in 1992 (computed from the same source as Table 4.3).

This discrepancy of rice farming scale between Japan and the United States affects the unit cost of rice production each country. In 1984, the rice production cost in Japan was 319,967 yen/kg[2] while it was 39,536 yen/kg in the United States (Soda, 1989:44). Because the land productivity of Japanese rice farming is said to be at the upper limit[3], no matter how intensively Japanese farmers utilize their small fields, they cannot compete with US rice farmers.

Because of this huge difference in unit production cost, the rice price is significantly higher in Japan. The Japanese government accepted this difference when the rice import issue was proposed by the United States. It announced that the retail rice price was 8.4 times higher in Japan than in the United States[4]. This price difference was further exacerbated by the high currency exchange rate

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[2]Computed from MAFF, Abstract of Statistics on Agriculture, Forestry and Fisheries, 1986:32.

[3]In 1987, land productivity of Japanese rice farming is 6,143 kg/ha which was almost twice as much as that of the world average of 3,221 kg/ha (FAO, Production Yearbook, 1987).

[4]Asahi-Shimbun, October 7, 1986:9. Applied Exchange Rate was 174.4 yen=1 US dollar.

brought on by the success of Japanese industry. Because of the high exchange rate, the prices of Japanese agricultural products soared, and they cannot compete with foreign agricultural products. Because the yen has become more expensive in the 1990s, the price differences are now even larger. Through these comparisons, it is easy to imagine Japanese agriculture will be crushed if tariffs and other aids for it are removed.

4.3 Rice Market

Since 1921, the Japanese rice market has been regulated by the Japanese government by law (Soda, 1989:186). Currently, of an annual production of 11 million tons of rice, about 10% is procured by the government, 50% is procured by the farmers association backed up by the government, 35% is consumed by farmers, and 5% is purchased by food processing companies (Masaki, 1994:109). The government has a rice buffer stock of a few million tons of rice. Because of this governmental control, the farm gate price is equal to the government procurement price. The government also decides the retail price of rice.

This governmental control has played an important role in stabilizing rice prices. During the period of food deficiency soon after WW II, this control successfully reduced social instability. However, currently this governmental control is often criticized as too costly

because, since 1962, the government has set a procurement price higher than the retail price to secure farmers' income (Masaki, 1994:103). This price setting has caused great financial burden on the government and taxpayers. In 1993, the national budget for the government control of the rice market was as high as 4.3 trillion yen[5].

In addition, the fact that Japanese rice has come to face overproduction since the 1970s has made matters more difficult. In order to adjust the volume of rice production, the government has been providing a subsidy to encourage farmers to reduce the area of rice production. The public at large questions why the tax is used to idle farmers. Also this subsidy is unpopular among farmers because a rigid adjustment quota is assigned to each local farmers association. Currently, 0.8 million hectares[6] out of 2.8 million hectares of rice paddies are not utilized for rice production.

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[5]MAFF, Poketto-norinsuisan-toukei, 1994:69.

[6]MAFF, Nougyou-hakusho-fuzokutokeihyo, 1990:81.

CHAPTER V

THE JAPANESE RICE IMPORT ISSUE FROM DOMESTIC AND INTERNATIONAL PERSPECTIVES

As discussed previously, because rice has deep cultural, agricultural and dietary significance in Japan, most Japanese believed the importation of rice to be impossible. This was reinforced by article 17 of the General Agreement on Trade and Tariff (GATT) which stated that the trade of basic food items such as Japanese rice could be governmentally controlled. At this point, the question why Japan decided to liberalize its rice market in 1993 arises. To answer this question, in this chapter the political economic environment is examined along with the dynamics which brought about the Japanese rice imports. As will be discussed, liberalization of the Japanese rice market was achieved due to coinciding factors in US rice agriculture and Japanese industry.

5.1 The Process to Reach Liberalization of the Japanese Rice Market

Before the political economic analysis of the Japanese rice import issue, its history is reviewed here. The issue

was triggered by the United States Rice Millers Association (RMA) on September 10, 1986. RMA submitted a petition to the United States Trade Representative (USTR) demanding liberalization of the Japanese rice market. It argued that the Japanese rice market was exclusively protected by the Japanese government and that liberalization of the market would be beneficial both to the US rice industry and to Japanese consumers, and demanded that the US President consider use of section 301 of the Trade Act of 1974, as amended, if necessary. In no time, the Japanese government reacted to USTR so that the claim was declined because Japan's control of rice imports is admitted by GATT. Although RMA's demand was supported by Republican Senate candidates for the midterm elections in California and Louisiana, the USTR turned down RMA's claim in late October 1986 in order to avoid further strong emotional reaction in Japan. However, to assuage Republican candidates' disappointment, the USTR decided to add this issue to the agenda of the GATT Uruguay Round at the suggestion of the RMA. Although the Japanese government at first disagreed with discussion of the rice import issue in the GATT UR, it finally agreed in April 1987 since Japan was one of the proposing countries of the GATT UR which began September

1986[1].

During the GATT UR, the Japanese rice import issue was discussed as an item for the agenda of creating a new agricultural trade rules to liberalize world agricultural markets. Because this agenda was so sensitive to every participating country, disputes were constant and intense. The United States, for example, maintained that the total end to export subsidies was necessary while the European Community insisted on only a reduction of export subsidies. Japan, on the other hand, advocated the importance of food security and maintained that the new trade rule should allow some kinds of adjusting measures so that each country could maintain a certain level of domestic agricultural production. The Japanese government also believed that fundamental grains (such as rice for the Japanese) should be supplied domestically. Thus, it seemed that each country's idea was so different that the debate was deadlocked and splitting up.

However, the long discussion was finally concluded in December 1993 with painful compromises on all sides. Japan decided to partially open its rice market because it had to withdraw its advocacy above due to the emergency rice import in 1993 to supplement the worst rice harvest since WW II. Under the new GATT rule, with some exceptions such as

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[1] Because the original goal of GATT UR was trade liberalization in many fields such as service and intellectual property, much of which Japan had been seeking, Japan was one of the countries that proposed the GATT UR.

Japanese rice, all agricultural market protection was converted into tariffs, and efforts to reduce these tariffs were required to each country. According to the new rule, Japan must import 4% of its annual rice consumption in 1994. This quota is to increase 0.8% every succeeding year and reach 8% in 2000. After 2000, Japan must apply for approval from GATT to continue its exceptional treatment. If denied, it must convert its rice subsidy into tariffs and reduce them to a minimum level. Since the direction of the new GATT rule is to convert all subsidies to tariffs and reduce them, it is anticipated that Japan will have to give up its exceptional treatment in 2000.

5.2 The International Political Economy which Initiated the Japanese Rice Import Issue

As reviewed previously, the RMA's demand initiated the Japanese rice import issue in 1986 and threw Japan into the international turbulence of the GATT UR. Because it was originally expected that every country would be forced to compromise in the GATT UR to insure its success, it can be said that the RMA's victory was almost assured when Japanese rice was drawn into the GATT UR in 1987. Thus, we will focus on the political economic circumstances which led to RMA's demand. To begin the discussion, we will first review the digest of the RMA's petition, which is more than a hundred page long.

The Japanese government had kept an almost exclusive policy to eliminate cheap and high quality foreign rice. The huge Japanese rice market is protected for the Japanese part-time farmers whose scale is almost uneconomical. In this shielded market, the Japanese rice price is 10 times as high as the international rice price, and Japanese consumers are forced to pay an extra $18.5 billion annually.

Because the Japanese rice policy prevents US rice producers from accessing the Japanese rice market, section 301 of the Trade Act of 1974, as amended, can be applied to this case. The Japanese government has kept the domestic rice price several times higher than the international price. The wholesale price of the Japanese standard rice is $2101 per metric ton whereas the same quality rice is merely $215 per metric ton in the international market.

The US rice industry is highly dependent on exports, and US rice represents a significant portion of the world rice trade. During the period from 1979 to 1984, on the annual average, 2.72 million tons or 54% of the 5.07 million tons of total US rice production was exported. Liberalization of the Japanese rice market would increase the price of the US export rice by $203 per ton and the annual US rice export by 2.45 million tons or by $1,665 million. A recent report by the World Bank shows that liberalization of the Japanese rice market would expand the world rice market by 30% and raise its price by 4%, which will contribute to stabilization of the international rice price.

The President should take drastic measures so that US rice would be fairly treated and sold in Japan. The President should begin negotiation and make the following agreements with Japan:

a. Significant or complete liberalization of the Japanese rice market,

b. The Japanese government's efforts to promote mass consumption of US rice,

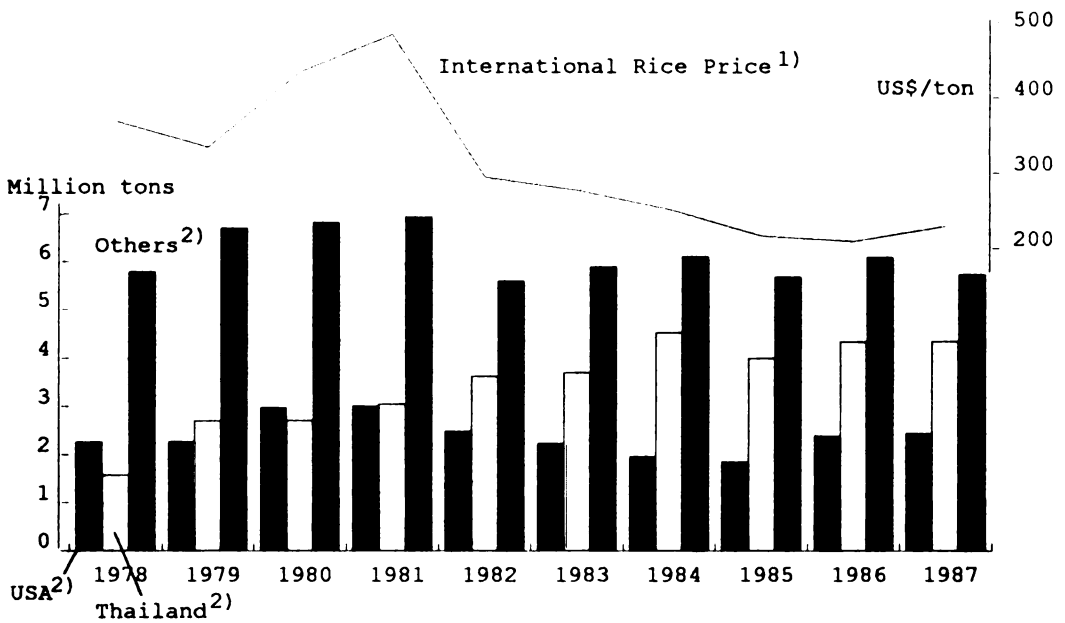
c. Purchase of US rice by the Japan Food Agency in the Japanese government.

If the Japanese government is unwilling to take part in this negotiation, the President should take appropriate measures to insure that Japan begins importing rice. These measures would include retaliatory tariffs or import limitations on Japanese industrial products to the United States.

In this way, the RMA demanded radical liberalization of

the Japanese rice market. Why had the RMA come to maintain the demand? What is the social and economic background behind it? To answer this question, the international rice market has to be reviewed from the late 1970s.

Figure 5.1: Competition of the USA and Thailand in the International Rice Market



Source: 1) UNCTAD, Monthly commodity price bulletin, 1970-1989 supplement.
2) USDA, Agricultural statistics, 1981, 1982, 1983, 1985, 1987, 1989.

In the world rice market, the late 1970s and the early 1980s was a period of keen export competition between Thailand and the United States. Figure 5.1 shows trends in the international rice price and the export amount of the two countries in this period. This figure shows that the export of Thailand had been increasing and in 1982 surpassed

that of the United States which had a declining trend. This figure implies the United States rice was the loser in the competition. The reason for this failure is that the United States could not survive the declining international rice price seen in the Figure 5.1. This low price damaged the ability of the United States to compete because US rice production cost was 1.5 times higher than Thailand's in 1984 (Table 5.1).

Table 5.1: Comparison Rice Production Cost (1984)

	Production Cost
Thailand	27,023 yen/ton
the United States	39,536 yen/ton

Source: Soda (1989:44).

This failure of US rice was the strongest reason for the RMA's demand of Japanese rice market liberalization. After its failure against Thailand, the US rice industry had to find a new market, and the huge[2] but closed Japanese market was targeted. This was because the RMA believed that they had an advantage over Thai rice in Japan since the United States could export japonica rice which Thailand does not produce. The RMA also thought that they could win over Japanese domestic rice consumers because of their cheaper

[2] For example, in 1985, Japan produced and consumed 14.6 million tons of rice domestically (FAO, Production yearbook, 1987) while the world rice market handled only 11.5 million tons of rice (USDA, Agricultural statistics, 1987).

rice production cost.

In addition to the RMA's struggle for survival, liberalization of the Japanese rice market was beneficial to the US federal government in helping to alleviate its huge financial deficit. In the 1980s, the United States suffered a serious financial deficit and had to cut expenditures including agricultural subsidies as much as possible. In fact, at the hearing before the committee on agriculture of the House of Representatives about the effects of the Balanced Budget and Emergency Deficit Control Act of 1985 on USDA programs, an assistant secretary of USDA mentioned as follows[3]:

> Failure to achieve a balanced budget can be blamed on every sector of the American economy to some degree. And agriculture must claim its fair share of the blame -- farm policy particularly.

In this difficult federal financial situation, the RMA's demand was welcomed by the federal government. Because US rice was much cheaper than Japanese rice, the United States could compete in the Japanese rice market without any subsidy. In this manner, the Japanese rice import issue arose from the tight situation surrounding the US rice industry in the 1980s.

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[3] Effects of balanced budget and emergency deficit control act of 1985 on US department of agriculture programs. In hearings before the committee on agriculture house of representatives ninety-nine congress first and second sessions, U.S. government printing office, 47, 1986.

5.3 Japanese Political Economic Dynamics Surrounding Liberalization of the Rice Market

The RMA's demand in 1986 was sensational to the Japanese and ignited a hot debate about the rice import issue. In this debate, the agricultural and rural sectors showed strong opposition to the rice import, but the industrial sector and some urban groups supported it.

First, the agricultural and rural sectors opposed opening the market because people believed that Japanese rice farming could not survive the crush of the rice price caused by imported rice. Some studies show that Japanese rice production would decrease by as much as 70 to 84% if the market were completely liberalized (Soda 1989:59-60). Therefore, the agricultural and rural sectors desperately rejected the idea of rice importation. Their strong rejection was revealed in the slogan of Zenchu's thirty million signature campaign discussed in Chapter I. To strengthen its intention to prevent liberalization of the rice market, it even mobilized the environmental meanings of rice production in its campaign slogan.[4]

Second, the industrial sector supported opening the

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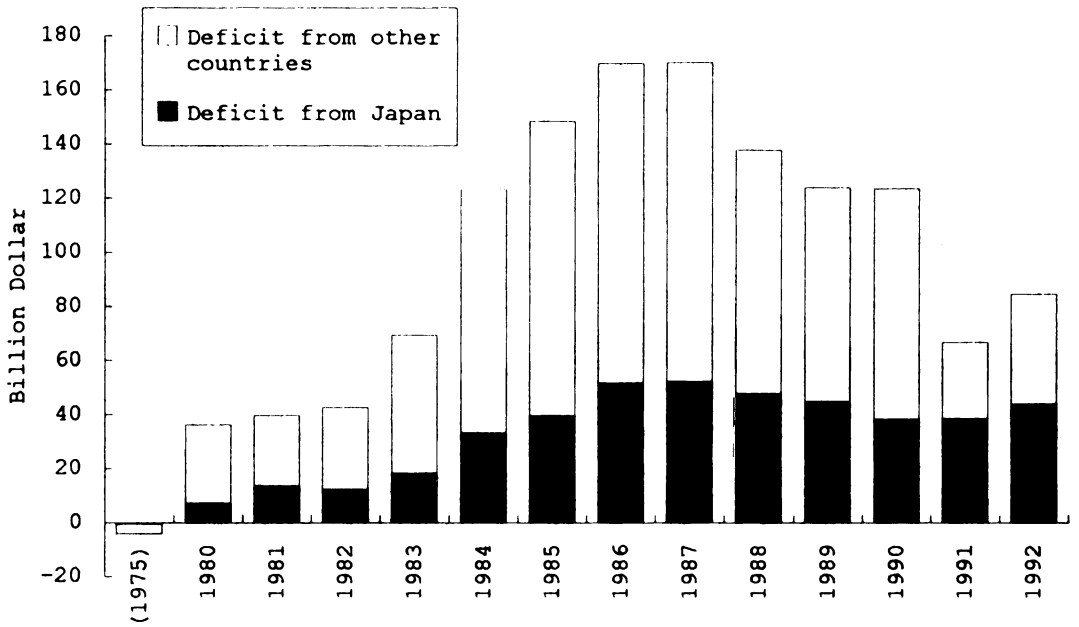
[4] In the rice importation debate, the cultural meaning of domestic rice (Chapter II) was a rather minor issue and was not treated as critical by either pro- or anti-rice import groups. Further research is required to clarify why it was so.

market because it believed that liberalization would help reduce trade friction between Japan and the United States. The cause of this friction is shown in the US trade deficit in Figure 5.2. This figure clearly shows that a significant portion of the US trade deficit is with Japan, and the Japanese contribution to the deficit has been increasing. This imbalance was the result of a surge of Japanese industrial goods such as cars and electronics into the US market. Total sales in these items are dependent on foreign

Figure 5.2: Trade Deficit of the United States



Source:Asahi-Shimbun-sha, Asahi-nenkan, 1984, 1985, 1986, 1988, 1991, 1994.

markets by 50-90% (Soda 1989:29). In the case of automobiles, Japan exported 6.3 million cars out of a total production of 12.3 million. Of these 6.3 million cars exported, 2.3

million were directed to the United States (Soda 1989:30). Because the demand for cars in the United States was about 10 million during that period, Japanese automobiles occupied as much as 23% of the US market. Since this 2.3 million was the total import quota assigned to Japanese cars to protect the US car industry, one may speculate that it would have been higher if the quota had been eliminated. The quota on Japanese cars indicates that the United States is desperate to rescue its own auto industry --traditionally the mainstay of the economy-- against inundation by autos from Japan. Automobiles, however, are not the only example; Japanese high technology goods are flooding into the US market. Typically, if you open a personal computer, the word "Japan" shows up on the tops of the chips except the central processing unit. Since high-tech goods are so strategically crucial, the United States has been sensitive to the Japanese competition in this area.

In this way, Japanese industrial goods are increasingly diffusing in the US market, and the trade imbalance between the United States and Japan is expanding. Because of this, Japan and the Japanese industrial sector have been under attack by the United States to reduce the trade surplus, and have been required to make efforts at reducing the imbalance. The Japanese industrial sector reached the conclusion that liberalization of the agricultural market, especially the rice market as the symbol, would be a good way to show Japanese efforts at reducing trade friction. In fact, when

Japan decided to open the rice market in the GATT meeting, Keidanren, the Japanese industrial association, expressed their joy in the major national paper Asahi Shimbun (December 8, 1993:10).

In addition to the industrial sectors, some urban opinion leaders began to advocate liberalization of the rice market. One of these leaders is Kenichi Omae who supported liberalization of the rice market for the following reasons (Omae, 1986:97-136): first, he argued that the low price brought by imported rice could reduce the value of rice paddies and promote conversion of rice paddies into residential plots (which are extremely expensive and in short supply in Japan). Furthermore, he stated that a low rice price would be helpful for consumers. Additionally, he maintained that free trade was an important principle by which industrialized Japan can flourish in the world. He also agreed with the industrial sector that liberalization of the market could alleviate the trade imbalance between Japan and the United States. Finally, he argued against the concept of maintaining food security with a high food SSR claiming it is an illusion. He stated that Japan is totally dependent on imports for its fossil fuel needs and that these fossil fuels are essential to food production. Because some of his reasoning accurately reflected problems of urban life, many urbanites supported him.

In the debate over rice importation, the Japanese Diet supported the agricultural and rural sectors, and tried to

prevent rice imports. In fact, when the RMA re-submitted its petition for liberalization of the Japanese rice market to the USTR in September 1987, the Diet adopted a resolution not to open the market. A digest of the resolution reads as follows:[5]

> Rice and rice farming are exceptionally important for the Japanese dietary pattern, agriculture, local communities, and environmental security. Although they have maintained sound development of our country, Japanese rice farmers are now facing as much as a 30% production adjustment. Under these circumstances, we are disappointed to hear the demand for liberalization of the rice market from the United States. We cannot accept it. Our government should face this problem resolutely.

This statement shows the Japanese Diet's fundamental orientation throughout negotiations of liberalization of the Japanese rice market. The Diet's attitude in this matter was firm and decisive.

Table 5.2: Distribution of Diet Seats in Japan

	Number of Seats		Population (in 1000s)		
Region	1950	1989	1950	1989	Increase
Rural Agricultural	293	288	49930	56721	13.60%
Urban Industrial	173	219	33268	64383	93.53%
Total	466	507	83198	121104	45.56%

Source: Appendix Table A.1

One now asks oneself why the Diet supported the rural and agricultural sector instead of the strong industrial

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[5] Translated from an article in Asahi Shimbun September 21, 1987:2.

sector which constitutes the Japanese economic mainstream. The reason is the stronger political power of the rural and agricultural sectors[6], which derives from the skewed distribution of the Diet seats shown in the Table 5.2. This table dichotomizes prefectures according to their farm family population rates (FFPR). In 1989, rate of FFPR was 15.53% in overall Japan. If the FFPR of a prefecture exceeds 15.53%, it is classified as a rural agricultural region (RAR); otherwise it is considered an urban industrial region (UIR). In this table, if rows of RAR and UIR are compared, the RAR's strong political power becomes clear. In 1989, RAR's population of 56.7 million was less than UIR's population of 64.4 million, but the RAR had 288 Diet seats which far exceeded UIR's 219 Diet seats. This imbalance happened because the legislature could not catch up with rapid migration from RAR to UIR which took place during the period of rapid economic development after WW II. In 1950 before the period of massive economic development, the number of Diet seats in RAR and UIR well reflected the population size of each. Some lawsuits have been filed that claim this contradiction should be amended by a reduction of RAR seats and an increase in UIR seats. A amendment of this

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[6] This strong political power of Japanese agricultural and rural sectors is well known even in the United States. When the US Secretary of Agriculture met the Japanese press in 1987, he acknowledged that the rice import issue would be very difficult because of the strong agricultural and rural sectors.

sort, however, would be nearly impossible because the distribution of the Diet seats is decided by the Diet itself.

Because of this imbalance of representation, the Diet had to stand by the agricultural and rural sectors. This finding is reinforced by the fact that the environmental meaning of rice production is mobilized in both the Diet's resolution above and Zenchu's campaign slogan (Chapter I). What, then, is the honest feeling of the members of the Diet? Although an accurate estimation is difficult, it seems that many members felt that the Japanese rice market had to be opened. For example, Shin Kanemaru, the prime leader of the leading Liberal Democratic Party at that time, was quoted as follows[7]:

> What will happen to the Japanese economy if our rice policy aggravates trade squabbles with the United States and leads that nation to shut out our automobiles, machinery and electronics?

Correspondingly, this remark was reinforced by the agreement of Noboru Takeshita, who was Prime Minister from 1987 to 1988. An interesting point here is that Takeshita agreed with Kanemaru despite the fact that Takeshita was elected in Shimane prefecture, the most depopulated rural prefecture in Japan. Because Kanemaru and Takeshita were the power brokers in the Diet, it is highly possible that their followers in the Diets held the same opinions. In this way, although they could not openly say yes to the rice import

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[7] Washington Post, May 29,1991:C8-9.

issue, not a few members of the Diet secretly supported rice importation in order to maintain good international relationships and the further industrial development of Japan.

The worst rice harvest in Japan in 1993 might therefore have been a gift from heaven to many Diet members. Thanks to this poor harvest, Japan's rice buffer stock was depleted, and rice had to be imported from the United States and Thailand. This emergency import contradicted Japan's position in GATT that production of fundamental grains such as rice should be self-sufficient for food security, and led Japan to decide to open its rice market.

Thus, the liberalization of the Japanese rice market reflected the bottom line for the Diet members who believed that the liberalization of the rice market was necessary for Japan to survive in the international community. Since this belief was the original position of the industrial sector, it can be said that the true winner in the rice import issue was the Japanese industrial sector.

CHAPTER VI

CONCLUSION

6.1 Conclusion

In this thesis, we developed our research along with two questions presented in the first chapter: social, cultural and environmental meanings of Japanese domestic rice, and the political economic reasons for liberalization of the Japanese rice market. Here, we summarize our research findings.

With respect to social and cultural meanings, domestic rice represents purity of food for the Japanese which in turn derives from imperial tradition. We also found that Japanese behavioral patterns such as preciseness, punctuality, and priority on equal shares and communal harmony originated from rice farming work. These two findings shows that the symbolic meaning of domestic rice as the nation's food has been developed through the long intercourse between the Japanese and rice.

As to environmental meanings, rice paddies have a significant public role in preventing natural disasters such as floods and ground subsidence. We also learned that it took a substantial amount of time to build up the rice

paddies, and that it is not easy to recover their productivity once they are abandoned. Moreover, this research showed that the Japanese rice culture is highly sustainable thanks to rice paddies.

With respect to the political economic dynamics of liberalization of the Japanese rice market, we found that the demand from the Rice Millers Association of the United States triggered the issue. Behind the RMA's claim we uncovered the US federal budget deficit and the failure of the United States to compete successfully against Thailand in the international rice market. About this issue, Zenchu or Japanese farmers organization opposed RMA's claim even mobilizing the environmental meaning of rice production while urban industrial sectors supported RMA's claim. Then we found that the Japanese Diet had to oppose rice imports due to the skewed Diet seat distribution which is advantageous to farmers although its members thought liberalization of the rice market was inevitable in order for Japan to flourish as a highly industrialized country. It was the bad rice harvest that became a good excuse for the Diet to liberalize the rice market. Finally, liberalization was agreed upon because industry was the priority for Japan.

Overall, from these research results, we can conclude that the Japanese chose the way to prosper as a highly industrialized country giving up cultural, social and environmental importance of domestic rice.

6.2 Implications

Implications for Japanese Policy

As we found in chapter III, rice paddies represent a significant portion of Japanese lands, and their environmental role cannot be disregarded. Rice paddies have to be conserved somehow if rice importation facilitate abandonment of rice paddies. Even if they are not utilized for rice production, rice paddies should be preserved to prevent some natural disasters. In particular, rice paddy in the upstream regions, which are usually mountainous, should be carefully protected because such paddy is more important than that in downstream regions or delta areas in terms of flood control and prevention of erosion. However, chances are higher for rice paddies in upstream areas to be abandoned because of depopulation of upstream rural regions and the difficulties for profitable large scale farming there (Sekiya, 1993:136). Thus some special measures such as environmental subsidy should be considered for such rice paddies.

As to food security, Japan must thoroughly examine every aspect of its food system from natural resource availability to social institutions. In the GATT UR, Japan claimed that fundamental grains such as rice should be self sufficient for security reasons. Although this claim sounds right, the self sufficiency of fundamental grains does not guarantee high food security. Japan has to be more aware of

the meaning of food security. As Omae, the leader of some Japanese urban group pointed out, Japan is dependent on imports for its petroleum energy that is essential for modern agricultural production. Food security is not simply security of food. Rather it is security of the food system. As Busch and Lacy (1984) did for the case of the United States, Japan needs to understand and assess its food security from the holistic view of a food system.

Global Food Security and Free Trade Capitalism

As discussed in chapter V, the world agreed with the new GATT rule which states that agricultural products must be minimally protected. In the long run, what does this result in? It is possible that production of a certain agricultural commodity will be concentrated in a limited number of regions. Such extreme concentration of agricultural production is not desirable for food security because the world food production becomes vulnerable to bad weather and the spread of disease. In terms of global food security, agricultural production should be scattered to some extent. Free trade capitalism in agricultural commodities and global food security seems to be contradictory in the long run.

APPENDIX

APPENDIX

Table A.1 is the original data of Table 5.3 in chapter V. This table sorts prefectures in the order of farm family rate (FFR) in the column furthest to the left ⑦, and dichotomizes them by the total average FFR (15.53%) in the left bottom cell. If the FFR of a prefecture exceeds 15.53%, it is classified as a rural agricultural region; otherwise it is considered an urban industrial region. Columns ① and ② compare numbers of Diet seats in each prefecture in 1950 and 1989. Columns ③ and ④ show population change from 1950 to 1989, and the increase rate is computed in column ⑥.

Figure A.1: Change in the Japanese Diet Seat Distribution

	Prefecture Name	① Number of Diet Seats	②	③ Population (in 1000s)	④	⑤ Farm Family Population (in 1000s)	⑥ =(④-③)/③ Population Increase Rate (%)	⑦=⑤/④ Farm Family Rate (%)
	(Year)	1950	1989	1950	1989	1989	1989	1989
Rural Agricultural Region (= Farm Family Rate > Total Average F.F. Rate)								
	Akita	8	7	1309	1245	473	-4.89	37.99
	Iwate	8	8	1347	1433	522	6.38	36.43
	Shimane	5	5	913	788	284	-13.69	36.04
	Nagano	13	13	2061	2152	770	4.42	35.78
	Yamagata	8	7	1357	1262	440	-7.00	34.87
	Tottori	4	4	600	620	210	3.33	33.87
	Hukushima	12	12	2062	2102	665	1.94	31.64
	Saga	5	5	945	883	268	-6.56	30.35
	Yamanahsi	5	5	811	848	253	4.56	29.83
	Niigata	15	13	2461	2478	715	0.69	28.85
	Aomori	7	7	1283	1529	440	19.17	28.78
	Fukui	4	4	752	819	234	8.91	28.57
	Kagawa	6	6	946	1029	291	8.77	28.28
	Tokushima	5	5	879	843	237	-4.10	28.11
	Shiga	5	5	861	1195	327	38.79	27.36
	Ibaragi	12	12	2039	2816	756	38.11	26.85
	Okayama	10	10	1661	1930	518	16.20	26.84
	Kumamoto	10	10	1828	1848	494	1.09	26.73
	Oita	7	7	1253	1249	329	-0.32	26.34
	Toyama	6	6	1009	1125	294	11.50	26.13
	Kagoshima	10	10	1804	1812	472	0.44	26.05
	Gifu	9	9	1545	2054	523	32.94	25.46
	Miyazaki	6	6	1091	1184	298	8.52	25.17
	Miyagi	9	9	1663	2210	542	32.89	24.52
	Tochigi	10	10	1550	1914	469	23.48	24.50

Table A.1 (Cont'd).

	Mie	9	9	1461	1783	422	22.04	23.67
	Ehime	9	9	1522	1535	347	0.85	22.61
	Kochi	5	5	874	842	182	-3.66	21.62
	Ishikawa	6	5	957	1155	247	20.69	21.39
	Gunma	10	10	1601	1953	413	21.99	21.15
	Wakayama	6	6	982	1089	222	10.90	20.39
	Nagasaki	9	9	1645	1580	306	-3.95	19.37
	Yamaguchi	9	9	1541	1579	299	2.47	18.94
	Hiroshima	12	12	2082	2831	463	35.98	16.35
	Shizuoka	14	14	2471	3651	590	47.75	16.16
	Nara	5	5	764	1355	211	77.36	15.57
	Subtotal	**293**	**288**	**49930**	**56721**	**14526**	**13.60**	
Urban Industrial Region (=Farm Family Rate < Total Average F.F. Rate)								
	Hyogo	18	19	3310	5312	677	60.48	12.74
	Fukuoka	19	19	3530	4742	537	34.33	11.32
	Chiba	13	18	2139	5415	598	153.16	11.04
	Aichi	19	22	3391	6540	690	92.86	10.55
	Kyoto	10	10	1833	2546	246	38.90	9.66
	Saitama	13	17	2146	6194	544	188.63	8.78
	Hokkaido	22	23	4296	5646	431	31.42	7.63
	Kanagawa	13	20	2488	7769	225	212.26	2.90
	Osaka	19	27	3857	8564	224	122.04	2.62
	Tokyo	27	44	6278	11655	115	85.65	0.99
	Subtotal	**173**	**219**	**33268**	**64383**	**4287**	**93.53**	
Total		**466**	**507**	**83198**	**121104**	**18813**	**45.56**	**15.53**

Source:Asahi-shimbun-sha, Asahi-nenkan , 1950,1952,1990,1991.

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