

# Japanese agricultural competitiveness and migration

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## Abstract

This paper reviews the importance of foreign trainees to farmers who want to expand their production of labour-intensive commodities. Local Japanese youth generally shun farm worker jobs, and Japan is generally closed to low-skilled migrants, but permits farmers, manufacturers and other employers to train and employ young foreigners for up to three years. In Ibaragi Prefecture north of Tokyo, the agricultural cooperatives that provide inputs to farmers and market their vegetables and other produce helped their farmer-members introduce foreign trainees, who allowed farmers to expand their production and increased cooperative sales. Trainees must be paid the Japanese minimum wage for most of the 36 months they are in Japan with the additional costs for train-related system, but they are still cheaper than full-time Japanese farm workers. Main data are coming from the statistics like Japanese Agricultural Census and interviews with coops, farmers and trainees.

**Keywords:** Horticulture, technical intern trainees, minimum wage, farm enlargement, co-op as supervising organization

## Introduction

Japan is generally closed to low-skilled foreign workers, although foreign students working part time, the descendants of Japanese emigrants to Brazil known as *nikkeijin*, and unauthorized foreigners fill up to 434,000 low-skilled jobs in 2003 (MHLaW, 2004). Students, *nikkeijin*, and unauthorized foreigners can change employers, and most avoid farm work. For this reason, farmers whose operations are too large for their own and family labour must hire Japanese workers or foreign trainees, mostly Chinese youth who can stay with one Japanese farm for up to three years.

There were 130,000 foreigners in Japan under the Technical Intern Training Program in 2011, and 117,000 Brazilians *nikkeijin*. Trainee visas are for training in Japan, although trainees can also do paid work with a specific employer, while *nikkeijin* visas allow permanent residence in Japan and give permission to work for any employer (MHLaW, 2012). Trainee and ethnic Japanese visas were introduced in 1989, marking the first time that unskilled foreign workers could receive Japanese visas. The hope was that industries and occupations that had been employing illegal aliens or foreign students would switch to these visas (JITCO, 2012).

One of these industries is agriculture. Agriculture's share of Japan's GDP is slightly higher than agriculture's share of the US GDP, 1.4 percent versus

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1.1 percent in 2007. Half of the 128 million Japanese residents are in the labour force, but Japan has 4.2 percent of its workers in agriculture, versus 1.4 percent in the US. As in the US, most Japanese farmers are older: 40 percent of Japanese farmers are 65 or older, while almost 20 percent of US farm operators are 65 or older. Most of the 2.9 million Japanese farm families with elderly heads cannot expect a family member or someone else to take over their farms, due to poor agricultural income (MIAAC, 2012).

However recently the commercial farms have become larger by renting in from these small farms with the help of foreign trainees, especially in labour-intensive agriculture. This trend is shown by the various statistics and the interviews with agricultural coops, farmers and trainees. Farms interviewed by Ando and Horiguchi were selected by the coops among the large farms hiring the technical intern trainees.

The Japanese ancestry visa, issued mostly to Brazilians *nikkeijin*, permits them to change employers, and can be renewed every three years. Therefore, people who have this type of visa are not willing to work for the industries and occupations that only pay minimum wage, but choose work for major manufacturers, where wages are higher (Japan Immigration Association, 2004).<sup>1</sup>

The Technical Internship Training Program (TITP) introduced in 1993 had two components: off-the-job training and on-the-job training in the first year, and technical internship training in the second and third years (JITCO, 2012). Although wages increased after the first year to the Japanese minimum wage, the TITP was problematic. For example, during their first year in Japan, trainees spent most of their time working rather than attending lectures, but were paid only a half the Japanese minimum wage because they were officially undergoing training. After the first year, trainees signed employment contracts that guaranteed them the Japanese minimum wage, compliance with the *Labour Standards Act* and overtime allowances, making it clear that they were working for lower wages during their first year in Japan. As trainees learned that they could earn higher wages during their first year by working illegally, some ran away from the firms or farms to which they were assigned, prompting some employers to keep their trainees' passports (Yasuda, 2007).

These problems led to major revisions of the TITP in July 2009 (enforced one year later) that allowed trainees to become regular workers entitled to the Japanese minimum wage after a one-month training period in Japan (and a one-month training period in China before departing for Japan). The training focuses on the Japanese language, Japanese laws, and production methods, and trainees receive only a training allowance, followed by work at the Japanese minimum wage. However, trainees are still tied to one Japanese firm or farm (JITCO, 2012).

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<sup>1</sup> Statistics of Foreigner in Japan shows Brazilians *nikkeijin* workers are concentrated in the areas where car makers and electric industries have their plants while Chinese workers are evenly distributed including local areas in 2003.

Most foreign trainees in agriculture are engaged in vegetable and horticultural specialty production, such as in nurseries, about 20 percent are employed in livestock agriculture. Since trainees must be paid for a full year, most are employed in areas that offer year-round work, often in greenhouses during the winter months (JITCO,2012).

Ibaragi Prefecture north of Tokyo hires the most trainees, followed by neighbouring Chiba, Nagano and Kumamoto Prefectures. Most are employed on farms that can use them year round. Farmers who do not have year-round work rarely hire trainees, who must be contracted on an annual basis, and most hire Japanese seasonal workers instead of trainees. In Hokkaido dairy farmers hire experienced Japanese year-round workers rather than foreign trainees because they can afford to offer more than the minimum wage, a practice common for livestock producers (JITCO, 2012).

Ibaragi Prefecture has 30% of the foreign agricultural trainees engaged in Japan (See at the table 5). The major driving force is agricultural coops helping their farmer-members expand production and thus bolster the coop. As government-designated trainee supervising organizations, the coops recruit and support trainees for their farmer-members, who deliver commodities to the coop. The coops coordinate with the sending organizations in China, arrange interviews to match applicants and employers, and have liaison staff to deal with the trainees in Japan alongside two representatives from the Chinese sending organizations. Larger farms hired three to six trainees and, since each trainee can work in Japan for three years, farmers replace one or two each year.

Hiring trainees costs farmers. In addition to wages, farmers must pay return transportation costs, support during two months of training, the costs of the sending/supervising organizations, and various insurance premiums. Nevertheless, even with the additional costs, it is still cheaper to hire trainees than full-time Japanese workers. The cost of hiring a Japanese year-round worker for agriculture is 1,500 yen per hour with the annual wage of around 3.4 million yen including overtime allowances without insurance premiums (Ibaragi Chamber of Agriculture, 2012). This figure alone is more than 1 million yen higher than the annual cost of a trainee, 1.9-2.3 million yen (described specifically in the last page). Trainees from rural China can remit more in three years than they would be able to earn in China.

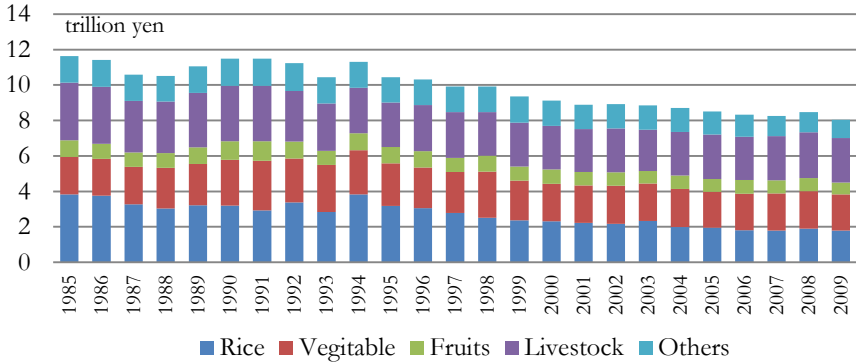
### **Japanese agriculture and horticulture as a leading sector**

Most Japanese farms are small. Family farms averaged 1.8 hectares (4.6 acres) in 2008. However, commercial farms sometimes rent or buy farm land from elderly farmers who no longer farm, and the number of larger farms with more than five hectares or 12 acres of land is rising (MAFF, 2010). These somewhat larger farms hire workers, including foreign trainees.

Japanese agriculture is shrinking. Gross farm income fell from 11.7 trillion in 1985 to 8.0 trillion in 2009, a drop of one-third, while the value of rice pro-

duction fell by more than half. Vegetable production, by contrast, is stable, so that the vegetable share of gross farm production rose from 18 percent in 1985 to 25 percent in 2009 and is expected to continue increasing (Figure 1).

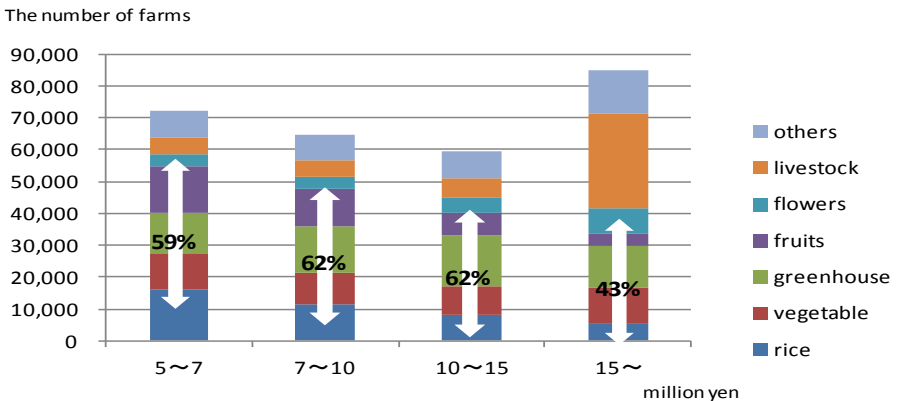
**Figure 1.** The transition of the gross farm production in Japan



Source: Total Agricultural Output and Agricultural Income Produced in Statistical Yearbook of Ministry of Agriculture, Forestry and Fisheries.

Vegetable farms are a key component of the horticultural sector. Horticultural farms producing vegetables fruits and flowers accounted for 43 percent of those with more than 15 million yen in yearly sales in 2005, with 59 percent having sales between 5 million yen and 7 million yen (Figure 2).

**Figure 2.** The farm structure of farming types by the scale of sales, 2005



Source: Agricultural Census (2005)

There were 510,000 vegetable farms in 2005, a sixth of all farms, but most were very small, with less than 0.5 hectares. The 28,000 farms that planted more than two hectares of vegetables were about five percent of vegetable farms, and these larger farmers often rented farmland (Table 1) to plant 112,000 hectares or 48 percent of the 232,000 hectares of Japanese vegetables in the Agricultural Census of 2005. These large vegetable farms hire both

part-time and full-time workers, but most find it hard to hire Japanese workers full-time workers at minimum wage.

**Table 1.** The structure of vegetable producing farms, 2005

Acreeage of planting vegetable	The number of farms	The average acreage of planting vegetable (ha)	The average acreage of field (ha)	The ratio of farms who rent farmland (%)	The ratio of lease farmland of the total operating field (%)
Total	510,586(100.0%)	0.53	0.81	18.4%	21.6%
Less than 0.5ha	385,503( 75.5%)	0.15	0.30	12.3%	16.2%
0.5~1.0ha	61,391( 12.0%)	0.60	0.88	26.2%	19.4%
1.0~1.5ha	23,925( 4.7%)	1.07	1.69	36.9%	21.4%
1.5~2.0ha	12,046( 2.4%)	1.55	2.41	44.5%	22.7%
More than 2.0ha	27,721( 5.4%)	4.17	6.30	58.3%	25.8%

*Source: Agricultural Census (2005)*

**Table 2.** The situation of hiring workers regarding vegetable farmers (2005)

Acreeage of planting vegetable	The ratio of farms who hired year-round workers	The average number of hired year-round workers per farm (person)	The ratio of farms who hired seasonal workers	The average number of hired seasonal workers per farm (man-day)
Total	1.9%	0.05	16.3%	15.0
Less than 0.5ha	1.0%	0.03	12.1%	7.3
0.5~1.0ha	3.2%	0.09	21.9%	21.3
1.0~1.5ha	4.1%	0.12	28.0%	32.2
1.5~2.0ha	5.0%	0.14	31.2%	34.8
More than 2.0ha	8.5%	0.28	45.8%	84.7

*Source: Agricultural Census (2005)*

Some large vegetable farms hire Japanese workers year-round, but most hire Japanese workers only seasonally. Almost 9 percent of vegetable farms that have two hectares or more of vegetables hire workers year-round, and almost half hire seasonal workers. Seasonal workers are hired by these larger vegetable farms for an average 85 man-days (Table 2).

### Foreign workers and the TITP

The March 11, 2011 earthquake, tsunami and radioactive contamination disaster caused by nuclear power plants located in Fukushima Prefecture prompted

an exodus of foreign workers and trainees from Japan, making many urban Japanese people aware for the first time of the widespread employment of foreign workers in Japanese agriculture as well as in textile, fish processing and other local industries.

The trainee system began as foreign aid in 1989, with the aim of accepting Asian youth into Japan to learn advanced industrial techniques. It has evolved into a guest worker program for industries seeking low-skilled foreign workers willing to accept minimum wages, including in agriculture, although the system is still formerly used to transfer skills through the training of personnel.

An increasing number of foreigners were coming to Japan since 1974 via mutual visa exemption agreements. This caused a significant increase of illegal foreigners, who were employed as cheap labour. These mutual visa exemption agreements expired in 1992, and there were crackdowns on illegal foreigners, prompting more companies to switch from illegal foreigners to legal trainees, whose number peaked at 72,000 in 2007 and fell to 45,000 in 2010 due to the 2008-09 recessions. There were 49,000 trainees in 2011, 80 percent Chinese.

In 2010, 5,700 were employed in agriculture as first year trainees (6,136 in 2011). Almost all trainees applied for the allowed two-year extensions (6,329 in 2011), so there are about 18,000 agricultural trainees in Japan (JITCO, 2012).

There are two types of foreign trainees: the Individual Enterprise Type (managed by individual enterprises) and the Supervising Organization Type (supervised by six types of chambers of commerce and industry or small business associations). Most trainees are taken on by Supervising Organizations (93% in 2011) and farmers usually belong to an agricultural co-operative or a small business association that acts as a Supervising Organization (JITCO, 2012)

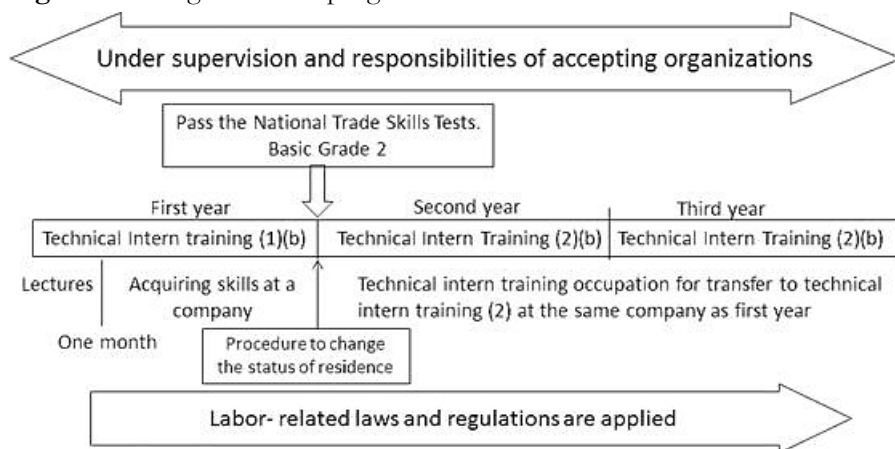
The eligibility requirements for trainees are stipulated in the *Immigration Control and Refugee Recognition Act* (Immigration Act) of 1989. A trainee at least 18 years old is recommended by the central or the local government of his/her home country. The 'Sending Organization' concludes an agreement with the 'Supervising Organization' and dispatches trainees to Japan.

A farm is allowed to hire two first-year trainees, so that, if farms hire two trainees every year, they may have a maximum of six. If the farm hires one trainee a year, its limit is three.

The period for engaging in the TTTP in the first year under the Supervising Organization as (1) (b) is one year and the period of the TTTP (2) (b) is two years, as Figure 3 shows. This means training can last for a maximum three years. The technical intern trainee (1) (b) who desires to advance to the second stage of the TTTP (2) (b) is required to pass the skill test of 'Basic Grade 2' of the National Trade Skills Test or its equivalent. After a series of procedures have been completed, the Status of Residence for the 'Technical Intern Trainee (1) (b)' will be changed to 'Technical Intern Trainee (2) (b)'. Technical intern training for the second and third year must be conducted at the same

company. Supervising Organizations work out their technical intern training plans so that a Technical Intern Trainee (2) (b) can reach ‘Grade 3’ skill level at the end of the second year.

**Figure 3.** A diagram of the programme frame



Source: JITCO guidebook ([www.jitco.or.jp/download/data/guidebook\\_english.pdf](http://www.jitco.or.jp/download/data/guidebook_english.pdf))

**Table 3.** Estimated number of trainees in agriculture

year	2001	2002	2003	2004	2005	2006	2007	2008
The number of trainees(A)	3516	4645	4280	5980	6606	7496	9264	6353
The number of trainees who applied for transition to technical interns(B)	510	849	1155	1837	2758	3341	4045	4981
The estimated total number of the trainees and technical intern trainees	4273	6004	6284	8972	11201	13595	16650	15379

Note: The estimated number of the trainee is the total of (A), (B) and the year after(B). The estimated number is the maximum.

Source: The annual white paper of Japan International Training Cooperation Organization (JITCO)

### Technical intern trainees in agriculture and its role

The estimated total number of the first year technical intern trainees and the second and third year technical intern trainees in agriculture has increased rapidly from 4,273 in 2001 to 15,379 in 2008. The estimate for the total number of trainees in 2011 is around 18,000 or less (Table 3).

The number of Japanese full-time farmers (defined as working persons mainly engaged in farming) between 15 and 39, who are considered to correspond to technical intern trainees in terms of age, was 96,000 in 2008. The number of agricultural trainees is equivalent to a fifth of the number of full-time Japanese farmers in the same age group. Table 4 shows that the average

wages of trainees by type of industry. Wages in agriculture are lower than average.

**Table 4.** The average basic wage of technical trainee by type of industry

Type of business	2006	2007	2008	2009
Textile and apparel	125	132	125	133
Machine and metalworking	168	174	155	149
Welding	166	177	162	157
Plastic modeling	160	169	154	156
Food	137	149	139	144
Fishery	113	116	105	105
Construction	150	152	141	143
Agriculture	129	135	126	137
Others	153	163	147	150
Total average	145	151	140	143

*Note1:* The data before 2006 and after 2009 are not available. *Note2:* The unit is thousand yen per month. *Source:* The annual white paper of Japan International Training Cooperation Organization (JITCO)

**Table 5.** The number of the trainees in agriculture by prefecture (Top 10)

	The number of the trainees		The number of trainees who applied for transition to technical intern trainee		The ranking of the vegetable production
	2007	2008	2007	2008	2008
Total	6,291	6,511	4,045	4,981	—
Ibaraki	2,199	2,339	1,249	1,546	3
Chiba	529	457	376	440	2
Aichi	235	206	285	385	4
Kumamoto	394	481	284	298	5
Hokkaido	306	328	164	246	1
Nagano	412	411	152	196	9
Gunma	88	151	114	170	7
Tochigi	300	214	110	136	8
Kagawa	153	138	93	133	30
Miyazaki	151	132	39	120	10
Total of the top-ten	4,767	4,857	2,866	3,670	—

*Source:* JITCO, MAFF.

The leading prefectures reflect vegetable production. The top-ten share of trainees accounted for 75% (4,857 in 6,511) of all trainees in 2008 (Table 5). Ibaragi Prefecture, which was the third prefecture in the 2008 ranking of vegetable production, hires about 30% of the total technical intern trainees. Ibaragi Prefecture accounts for only 8% of domestic vegetable production (2010) and 5% of total domestic agricultural production (2010) (MAFF,2012).



The Kanto Area composed of Ibaragi, Tochigi, Gunma, Saitama, Chiba, Tokyo, Kanagawa and Yamanashi Prefectures is the area around Tokyo with a large number of vegetable farms, including large farms that hire workers. The estimated total number of agricultural trainees driven by 3 times of each year's one is 6,000-7,000 in Kanto, and there are 245 supervising organizations. Among them, Ibaragi Prefecture has 5,000-6,000 trainees, according to JITCO data.

**Table 6.** The general situation of famers interviewed in Asahi Village

Farmer's number	The operation acreage			Family labor		The area planted				Total sales
	Land owned by farmer	Land rented from others	Total acreage	The number of men	The number of women	Sweet potato	Potato	Japanese radish	Cherry tomato (green house)	
1	270	1,470	1,740	2	2	1,740			30	3,600
2	450	600	1,050	1	1	800	350		50	3,300
3	450	820	1,270	2	1	1,270			25	2,500
4	230	1,000	1,230	2	2	1,010	200		20	2,100
5	350	800	1,150	2	2	1,150			30	2,600
6	380	700	1,080	2	2	1,000	200	200	20	2,900

*Note 1: The unit of the operation acreage is an are. Note 2: All family labourers are full-time farmers. Note 3: The unit of the area planted is an are. Note 4: The unit of total sales is ten thousand Japanese yen.*

*Source: Interviews were conducted in September 2002.*

### Trainees in Ibaragi Prefecture

Ibaragi Prefecture in the Kanto district, an Asahi Village, Yachiyo Town and Kamisu City in Ibaragi, is a typical vegetable producing region where farmers rent farmland from retired farmers and rely on foreign agricultural trainees. The agricultural coops in these areas are particularly enthusiastic about accepting trainees, explaining why trainees are concentrated where agricultural coops are more active.

Asahi Village in Ibaragi is known for sweet potatoes and greenhouse melons. The number of large-scale farmers has been increasing, from nine farmers who had more than five hectares in 1985 to 79 in 2005. Less than four percent of the land in Asahi Village was leased in 1985, but over 30 percent was leased in 2005. Larger farms mean more hired workers. Only one farm had year-round hired workers in 1985, versus 134 in 2005. There were seven year-round farm workers in 1990 and 280 in 2005 (Agricultural Census, 2005).

Interviews with farmers in September 2002 revealed that six operating more than 10 hectares; they rented three-fourths of their land. These two-generation families usually planted sweet potatoes and had greenhouses to produce cherry tomatoes, generating sales of at least ¥20 million a year (Table 6). All hired agricultural workers and four hired trainees. They had three types of workers: Japanese, Indonesians who do farm work when not working at the fish processing factory in a neighbouring seaside town, and trainees (Table 7).

**Table 7.** The hired farm workers in Asahi Village

Farmer's number	The number of seasonal workers		The number of foreign trainees
	Indonesian	Japanese	
1	0	5	2
2	12	4	2
3	3	3	0
4	2	0	0
5	2	2	2
6	0	0	3

*Note 1: Indonesians seem to be unauthorized seasonal workers. Note 2: All the Japanese seasonal workers are women and live in the neighbourhood of their employers. Note 3: All the foreign trainees are Chinese. Note 4: Foreign trainees are in the previous frames of Training and Technical Internship Program. Source: Interviews were conducted in September 2002.*

Farmer #1 hired two Chinese trainees since 1998, paying them 85,000 yen a month. He said: “I have to offer accommodation to them for free. But they really contribute to my farming. I want to hire more foreign trainees if I can.” Farmer #2 has had two Chinese trainees since 1997 and would like more, saying, “Chinese trainees work harder than Japanese workers because they come here to earn money. I hire Indonesians in the fall to harvest sweet potatoes. They appear in my field and beg for me to hire them sometimes... I need more foreign trainees as year-round workers to enlarge my scale of farming.” Farmer #3 said, “I do not accept Chinese trainees. In the sweet potato harvesting season, I employ three Indonesians for two months. I pay them 6,500 yen per day, more than the 6,000 yen per day paid to Japanese seasonal worker, because they work harder than Japanese.”

Yachiyo Town is famous for Chinese cabbage (“hakusai”) harvested in winter. The number of large-scale farms has been increasing, from one with more than five hectares in 1985 to 80 in 2005. Less than six percent of farmland was leased in 1985, versus almost 40 percent in 2005. The number of farms who hire year-round agricultural workers rose from none in 1985 to 140 in 2005 among 1,500 farms in Yachiyo, and the number of year-round hired workers rose from 10 in 1990 to 296 in 2005 (Agricultural Census, 2005).

Six farmers were interviewed in August 2003, including four who operated more than 10 hectares. They rented an average 84 percent of the land they farmed and hired trainees. The six farmers had sales of more than \30 million each, with Chinese cabbage as their main product (Table 8).

All six hired labourers, including five farms that each had two Chinese trainees. Japanese women were hired as seasonal workers for jobs requiring skills the Chinese trainees lacked (Table 9).

**Table 8.** The general situation of the target famers interviewed in Yachiyo Town

Farmer's number	The operation acreage			Family labor		The area planted					Total sales
	Land owned by farmer	Land rented from others	Total acreage	The number of men	The number of women	Chinese cabbage	Cabbage	Lettuce	Eggplant	Melon	
1	140	1,580	1,720	2	2	1,750	250	0	51	0	7,730
2	240	1,370	1,610	1	2	2,100	0	0	35	130	6,050
3	150	855	1,005	2	2	n.a.	250	0	0	330	5,044
4	208	800	1,008	2	2	1,200	70	30	0	0	5,500
5	200	400	600	2	2	600	320	140	0	0	3,628
6	100	350	450	1	1	350	270	100	15	50	3,472

*Note 1: The unit of the operation acreage is an are. Note 2: All family labourers work more than 100 day in a year and most of them are full-time farmers. Note 3: The unit of the area planted is an are. Note 4: The unit of total sales is ten thousand Japanese yen.*

*Source: Interviews were conducted in August 2003.*

**Table 9.** The hired farm workers in Yachiyo Town

Farmer's number	The man-days of seasonal workers	The number of Japanese year-round farm worker	The number of foreign trainees
1	412		0
2	1,350		4
3	480		0
4	40		0
5	90		0
6	35		0

*Note 1: All the seasonal workers are Japanese except those of No.2 farmer hiring Indonesian unauthorized workers with maximum of six. Note 2: Japanese year-round workers are hired through Public Employment Security Office. Note 3: All the foreign trainees are Chinese. Note 4: Foreign trainees are in the previous frames of Training and Technical Internship Program.*

*Source: Interviews were conducted in August 2003.*

Farmer #1 worries about the future: "I am wondering how long we can hire Chinese agricultural trainees. I'm afraid that the wages in China will increase in the near future because the Chinese economy will achieve high economic growth without fail." Farmer #4 said: "I think there is a problem regarding Chinese trainees. They do not have the ability to learn the proper cultivation techniques that take measures suited to the situation of each plant."

After the March 11, 2011 earthquake, many trainees returned to China, but not those in Yachiyo Town, even though Ibaragi is next to Fukushima Prefecture. *The Ibaragi News* reported that 28% of 1,583 agricultural trainees working for Ibaragi agriculture left by the summer 2011, forcing some farmers to reduce production according to the information from the related coops and the local newspaper (Gunji, 2012).

No trainees left Yachiyo Town because of the strong ties between local agricultural coops and a Chinese sending organization, including the bilingual representative of the Chinese sending organization who stayed in Yachiyo Town who provided information on radiation contamination to the trainees, who also used Skype to reassure their families in China that they could stay and work.

The basic trainee wage for 44 hours a week was 696 yen per an hour in 2012, the minimum wage in Ibaraki; pay for overtime work was 870 yen per one hour, an additional 25% on top of the minimum wage, with a maximum 30 hours of overtime a month. The annual wage, including overtime, is around 1.8 million yen. Some trainees mentioned they received net monthly earnings of 120,000 to 150,000 yen per month, after subtracting apartment rent (20,000 yen) and charges for utilities.

Chinese sending organization recruit mostly 25 to 35-year-old married men who want to work and save. Both trainees and Japanese farmers appear satisfied. Farmers state they would like to rehire experienced trainees that have returned to China, but returned trainees are not allowed to come back to Japan as trainees.

Trainees help large farmers expand. According to the interviews with large farms, which are different from the farms shown in the table 8 and 9, conducted by Horiguchi in summer, 2012, Farmer #7 said that his three Chinese trainees could perform basic operations in the field and greenhouse, but that Japanese workers had to classify and label produce to meet the requirements of the agricultural coop. The trainees are essential for the operation of 5 hectares of Chinese cabbage and 5 hectares for melons. Farmer #8 operates 20 hectares for Chinese cabbage with two family members, four Chinese trainees and two Japanese seasonal workers. Farmer #9 stated that two family members alone are not able to grow 3.6 hectares of vegetables and 2.1 hectares of melons in greenhouses, so two Chinese trainees and three Japanese hired seasonally on a part-time basis were needed. Farmer #10 grows 15 hectares of Chinese cabbage and 5 hectares of rice. There are two family members and four Chinese trainees, but rice production is managed by only family members, not Chinese trainees, because rice cultivation is not considered a transferable technique under the program.

A 2010 survey of 178 major vegetable farms in Yachiyo conducted by the local extension office in 2010 hired 432 full time workers, with three family members and three trainees in each farm<sup>2</sup> (Survey of Local Extension Office, 2010). Around 270 Chinese trainees hired through local agricultural coop, and 300 trainees hired through other several associations, are working for agriculture in January 2013 according to the information given from the Town Office. Statistics of Yachiyo Town shows the number of foreigners at the end of

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<sup>2</sup> Survey of questionnaire to 186 big vegetable farms in Yachiyo was conducted in summer 2010 by the local extension office belonging to Ibaragi Prefectural Office. The answers from 178 farms show the labour force of these farm.

2010 who made the resident registration is 920. (Statistics of Yachiyo Town, 2012).

Farmers, trainees and the staff of local coop called "JA Shiosai" in Kamisu City in Ibaragi Prefecture were interviewed in November 2012 by Horiguchi. JA Shiosai is an agricultural coop with more than 5,000 members and with sales of 7.6 billion yen in 2011, including 6.4 billion yen from the sale of green peppers. There were 159 trainees (all Chinese) hired by 96 farms, 1.7 per farm in November 2012. The agricultural coop has worked with a sending organization based in Northeast China since 1998 to recruit trainees. Japan requires sending organizations to provide copies of contracts between them and trainees since 2010 to reduce recruitment charges in China<sup>3</sup>.

In Kamisu City farmers used to hire illegal foreigners and foreigners engaged in the seafood processing industry for 200 yen per hour after 1975. However, the employee-employer relationship was not stable, prompting the agricultural coop to recruit trainees.

Green peppers are harvested twice a year and generate sales of 3 million yen per 10 ares (10 ares is equal to 0.1 hectare or 0.25 acres) per harvest. Major production costs include fuel, whose cost is 65% of sales, and labour costs. Green peppers are harvested daily, often by female Chinese workers. Farmer "I" hires two female Chinese trainees for his 65 are facility, soon to be expanded to 80 ares with an additional trainee. The sales of green peppers grown in the facility are 40 to 50 million yen per year on average. The current workforce consists of one manager, two trainees, and three part-time workers (working a total of 1,000 hours). The part-time workers (female Japanese workers who live nearby) are paid 750 yen per hour (800 yen for experienced workers), but they are hired only at the busy time of harvesting. Farmer "I" has 30 are greenhouse and a total of 60 ares under operation that generate sales of 18 million yen a year with a workforce of one manager, one male trainee, and two to three Japanese part-time workers (working a total of 270 man-days).

The agricultural coop recruits trainees three times a year, and 20 to 30 trainees are hired each season. Over 50 Chinese applied, with the number reduced by half after the first interview and health check conducted by the sending organization. Remaining applicants received a month of training in China, and 20 signed contracts with Japanese farmers and sponsoring organizations. Japanese farmers prefer to hire married trainees, believing that they work harder. Although most trainees who complete their first year continue to the second, some return, so the share of trainees continuing after year one is about 80 percent.

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<sup>3</sup> Interviews with the staff of JA Shiosai conducted by Horiguchi in November 2012 cleared the contracts between farms and Chinese technical trainees including female ones. Farmers provided the information concerning about their business, while Chinese trainees mentioned their real saving.

Japanese farmers must pay the minimum wage of 702 yen per hour since October 2012. The monthly wage is 121,570 yen, and the overtime allowance is 878 yen per hour, generating 1.46 million yen per year for working regular hours, and about 1.77 million yen if overtime allowance is included for the legally permitted number of hours. Trainees spend the first month in Japan in training, receiving 60,000 yen from their employer while they learn Japanese and get orientation. Farmers also pay 93,000 yen yearly to the agricultural coop and 264,000 yen to the sending organization, plus 33,000 yen, one third of 100,000 yen for return transportation and 33,000 yen for worker accident compensation insurance and comprehensive insurance, making total labour costs 1.9-2.3 million yen for a year trainee.

There are deductions from trainee pay, from the cost of accommodation (20,000 yen per month) to utilities (7,000 yen per month) or 324,000 yen a year due to coop's guidance. In their second year, trainees must join national health insurance and contribute 12,000 yen per month, a total of 144,000 yen a year. Trainees pay for their own food, which can be purchased from local Chinese supermarkets, for costs of 15,000 yen per month, for total expenditures of 648,000 yen a year, reducing the gross income of 1.77 million yen to 1.12 million yen, and enabling trainees to remit a million yen (\$11,100) a year. These data and contents of the contracts are provided from the local coop.

## Conclusions

Japan's technical trainee program admits about 18,000 mostly Chinese married men to support large vegetable and horticultural specialty farms. Its importance is shown by their high figure at 20 percent of the 96,000 same aged Japanese prime-working farmers as trainees. The trainee program was revised in 2009 to make it more of a guest worker program and less of training program, but Technical Intern Trainee Program still has the twin goals of training foreigners from poorer Asian countries in Japanese agricultural techniques and filling jobs on Japan's farms.

Most observers consider the TITP more of a guest worker program than a trainee program. Trainees are more interested in maximizing their savings and remittances rather than in learning skills in Japan that they will use when they return to China.

Surely the trainees do learn while they are in Japan, including knowledge of Japanese work and business practices and the Japanese language but still their main target is saving. Under this gap of the scheme, the role of supervising organization is important to keep good relation between employers and employees. So far agricultural coops have done the appropriate function to work the TITP, resulting in development of their local agriculture and in better business for themselves. And the costs for this system in addition to wages are charged to farms but they are still within business, comparing with high costs for hiring Japanese year-round workers. Further loosening requirements by turning the TITP into a normal guest worker program could help Japanese

farmers in agriculture and other industries that have trouble recruiting Japanese workers.

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